National Weather Service
Quad Cities

Service Guide

The WFO Quad Cities Service Guide

A GUIDE TO SERVICES AND PRODUCTS PROVIDED BY WFO QUAD CITIES FOR EASTERN IOWA, NORTHWESTERN ILLINOIS, AND NORTHEASTERN MISSOURI

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Foreword

The WFO Quad Cities Service Guide was designed specifically for the news media, emergency management, and other partners who utilize National Weather Service products and services. We hope you will find this a handy reference tool for answering questions concerning the daily mission of the National Weather Service. If you should have any questions or would like to offer comments on this guide, please contact one of the following office managers:

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Acknowledgements

The authors would like to credit the following sources for inspiring both the structure and content of *The WFO Quad Cities Service Guide*:

The WFO Paducah Navigator, A Guide to Products and Services Provided by WFO Paducah, written by Ryan J. Presley.

National Weather Service Media Guide, Gaylord, Michigan.

The authors would also like to thank individuals at WFO Quad Cities who have graciously reviewed this guide and provided numerous suggestions for improvement.

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Background & Mission

The National Weather Service (NWS) is an agency under the National Oceanic and Atmospheric Administration (NOAA) and the Department of Commerce (DOC). "The National Weather Service provides weather, hydrologic, and climate forecasts and warnings for the United States, its territories, adjacent waters and ocean areas, **for the protection of life and property and the enhancement of the national economy**. NWS data and products form a national information database and infrastructure which can be used by other governmental agencies, the private sector, the public, and the global community."

This mission is carried out by a highly trained workforce amidst a network of weather offices located throughout the United States and its territories, operating around-the-clock, 365 days a year. Information is made available to the private sector through such outlets as Family of Services, NOAA Weather Wire Service, Emergency Managers Weather Information Network, and the Internet to meet specific and unique individual, corporate, and educational needs.

NWS Quad Cities Vision and Values

Within the framework of the national mission outlined above, our priority for service to the nation is ***protection of life and property, and enhancement of the national economy***. For the National Weather Service in the Quad Cities, this means constantly striving to provide accurate weather and hydrologic services to the best of our ability for the residents in eastern Iowa, northwest Illinois and northeast Missouri.

Our Vision: "Provide "World Class" climate, water and weather products and services, through the infusion of advanced science and technology, dedicated teamwork, superior customer service, and steadfast public outreach."

Our Values: "We are committed to excellence, providing customer - oriented service through teamwork, professionalism, and integrity."

Office Team Members

ADMINISTRATIVE AND SUPPORT . . .

- Meteorologist-In-Charge
- Warning Coordination Meteorologist
- Science and Operations Officer
- Service Hydrologist
- Data Acquisition Program Manager
- Information Technology Officer
- Administrative Assistant

WARNING AND FORECAST OPERATIONS . . .

- 5 Lead Forecasters
- 4 Journey Forecasters
- 2 Hydrometeorological Technicians
- 2 Meteorologist Interns

ELECTRONICS SUPPORT TEAM . . .

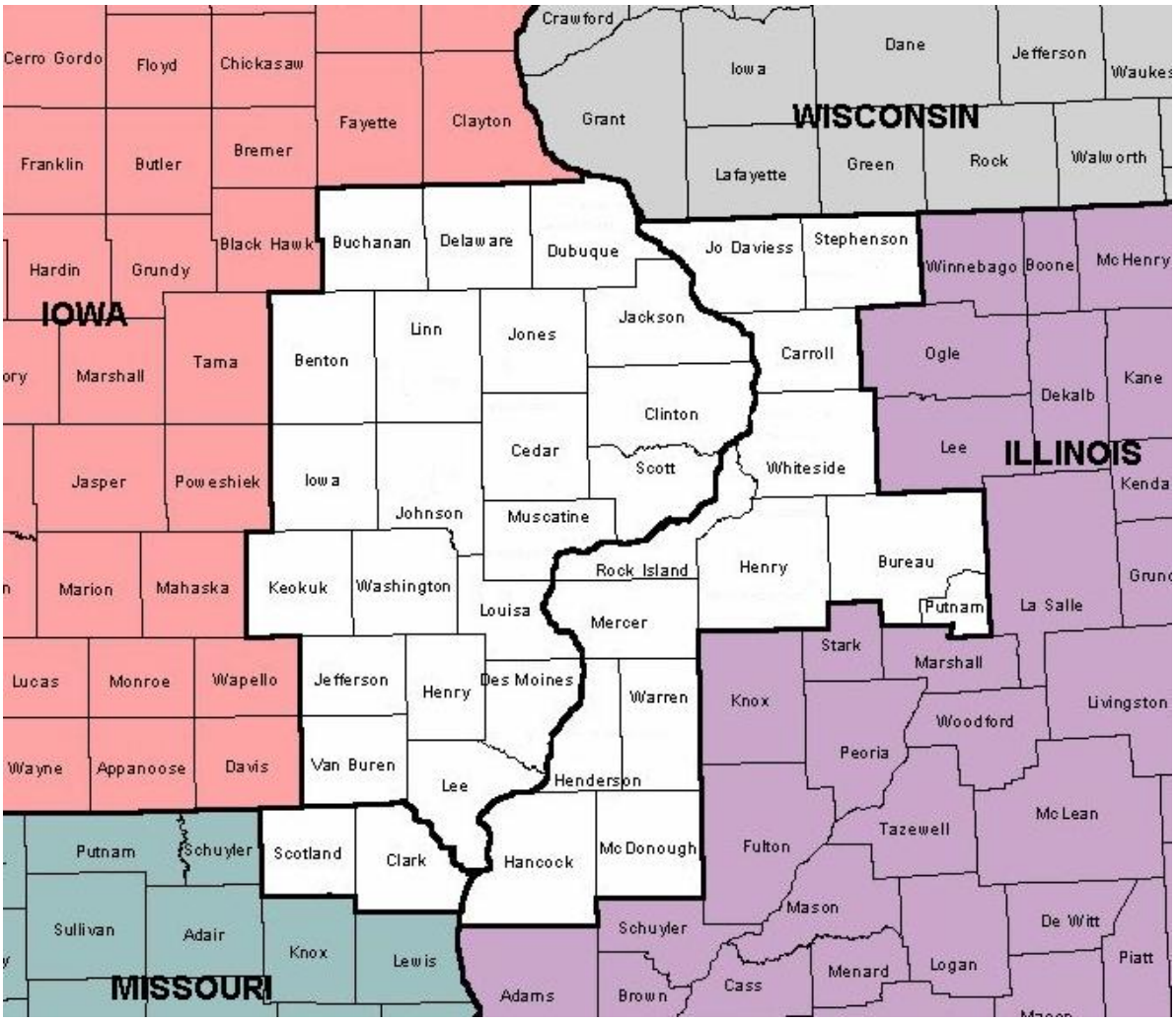
- 1 Electronic Systems Analyst
- 2 Electronics Technicians

Service Area Configuration

There are 122 NWS Weather Forecast Offices (WFO) located throughout the United States. Each local WFO is responsible for issuing forecasts and warnings and coordinating with partners and customers within their local service area.

WFO Quad Cities' area of responsibility encompasses 36 counties, comprised of 21 in eastern Iowa, 13 in western Illinois, and 2 in northeast Missouri. Immediately surrounding WFO Quad Cities are similar offices located in: La Crosse and Madison, Wisconsin; Chicago and Lincoln, Illinois; St. Louis and Kansas City, Missouri; and Des Moines, Iowa.

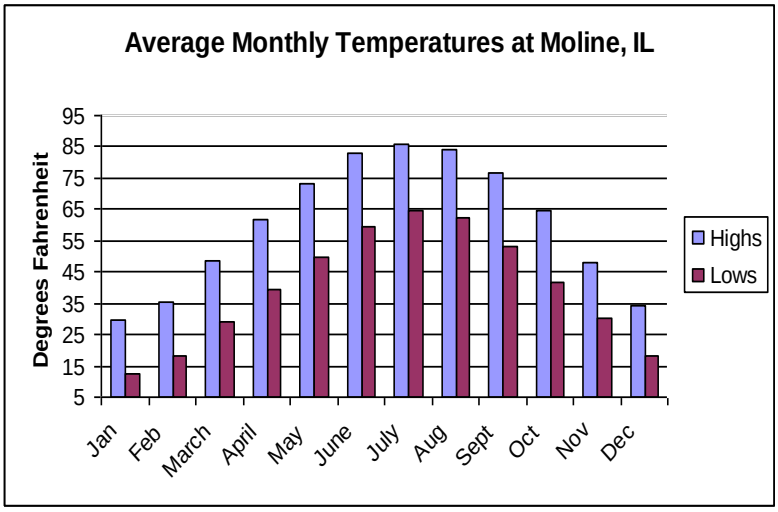
The following map details the county configuration for the Quad Cities Service Area. WFO Quad Cities' area of responsibility encompasses the counties in white:

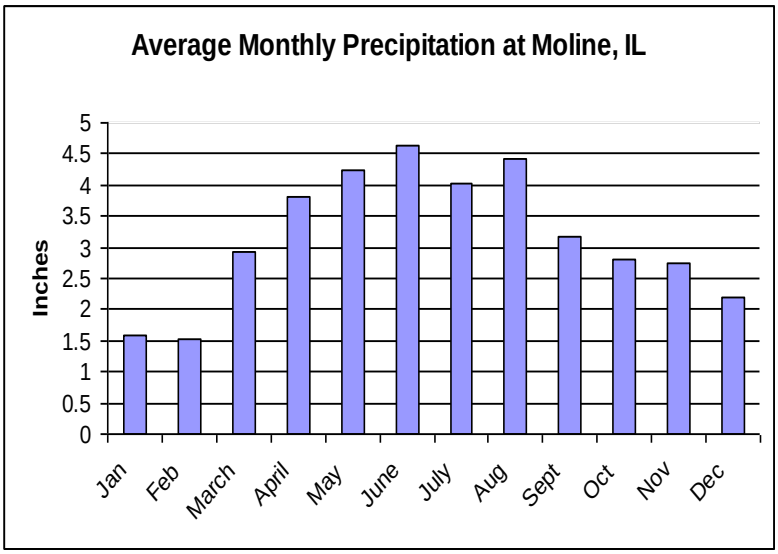


Climate Information

General Climatology

The climate of eastern Iowa and northwest Illinois is continental in character, featuring strong seasonal contrasts and sharp daily changes. Winters are cold and generally dry while summers are warm and humid. The mean annual temperature is about 50°F. In January normal lows fall to around 10 degrees and highs reach the upper 20s. In July the normal temperature reflects lows in the mid 60s and highs in the mid 80s. Annual precipitation averages between 30 and 40 inches with much of it falling in the period from April through September. Seasonal snowfall averages about 35 inches, but in the past 30 years has ranged from as little as 12 inches to as much as 71 inches. The average growing season is around 170 days between late April and mid-October. Details on climate extremes and normals are available in the Climate section of our web site (www.weather.gov/quadcities/climate).





Severe Weather Climatology

Significant weather, (i.e. tornadoes, large hail, damaging straight-line winds, floods, flash floods, freezing precipitation and heavy snow) presents challenging elements for which to provide forecasts and warnings. Knowledge of the climatology of significant weather is useful for anyone living in the area.

Tornadoes

A local study of tornadoes found that from 1950 through 2006, 701 tornadoes occurred in the Quad Cities NWS Service Area for an average of about 12 per year. Of these, 74% were "weak" with winds estimated at less than 110 mph (rated EF0 and EF1).

Tornadoes typically occurred from mid-March to mid-November with a peak from mid-April through late May. Almost all of the tornadoes occurred between noon and midnight, with a peak between 1400 and 1900 CST.

Wind

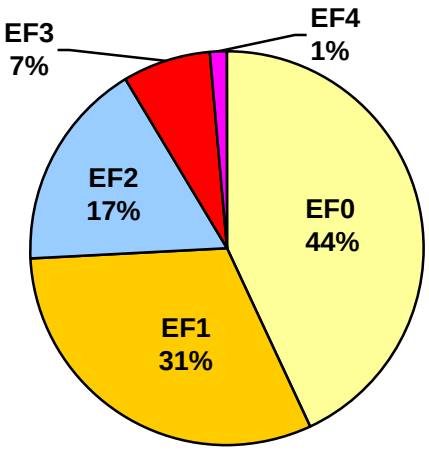
Using data from the Doppler Radar Era (1994-2006), another local study found that 1561 severe wind events (speeds 58 mph or greater) occurred, for an average of 120 events per year. The peak occurrence is between April and September, with a peak in June. Most events occurred between noon and 10 pm with a secondary peak in the early morning from 1 to 5 am.

Hail

From the same period as severe wind events, large hail events (3/4 inch or greater diameter) tallied 1346 occurrences, averaging 104 events per year. The hail season peaks between April and June, roughly parallel to tornadoes and about a month sooner than wind events. Most occurrences are between 1200 and 2400 CST with a diurnal peak between 1400 and 2100 CST.

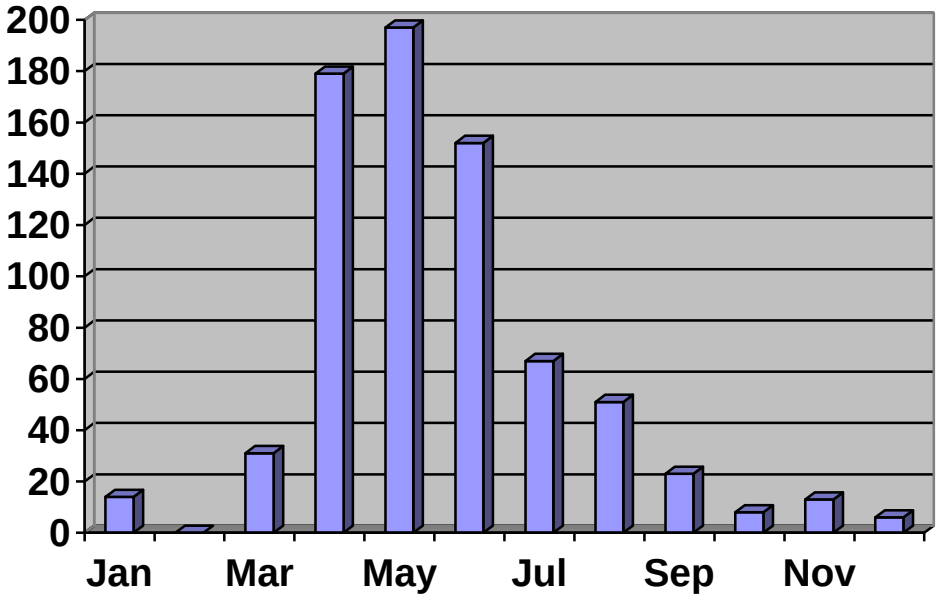
Strength of Tornadoes

1950-2009 / WFO Quad Cities, IA/IL CWA



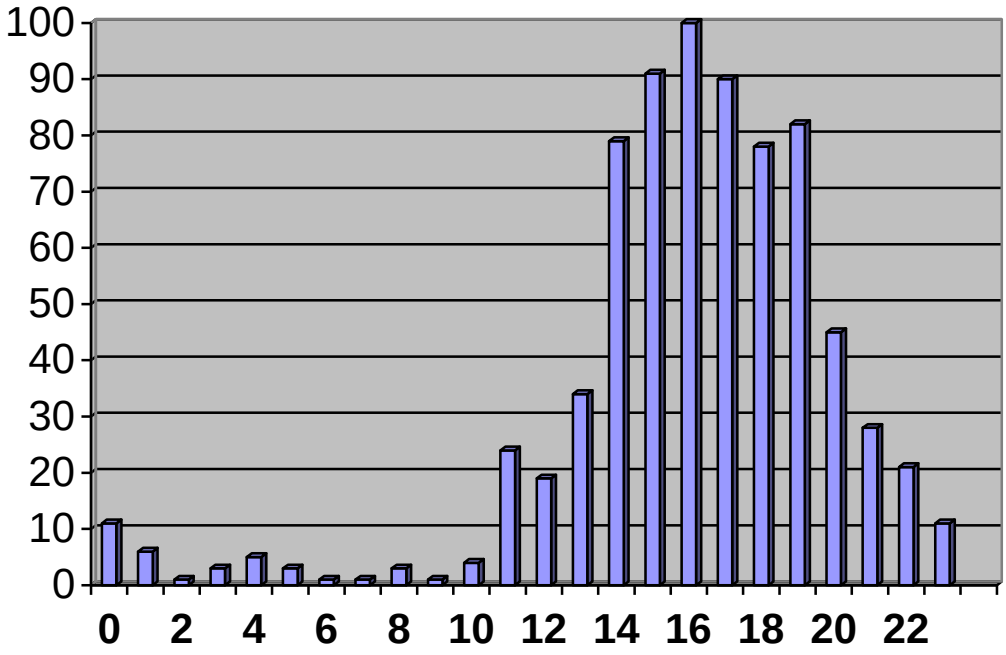
Number of Tornadoes by Month

1950-2009 / WFO Quad Cities, IA/IL CWA



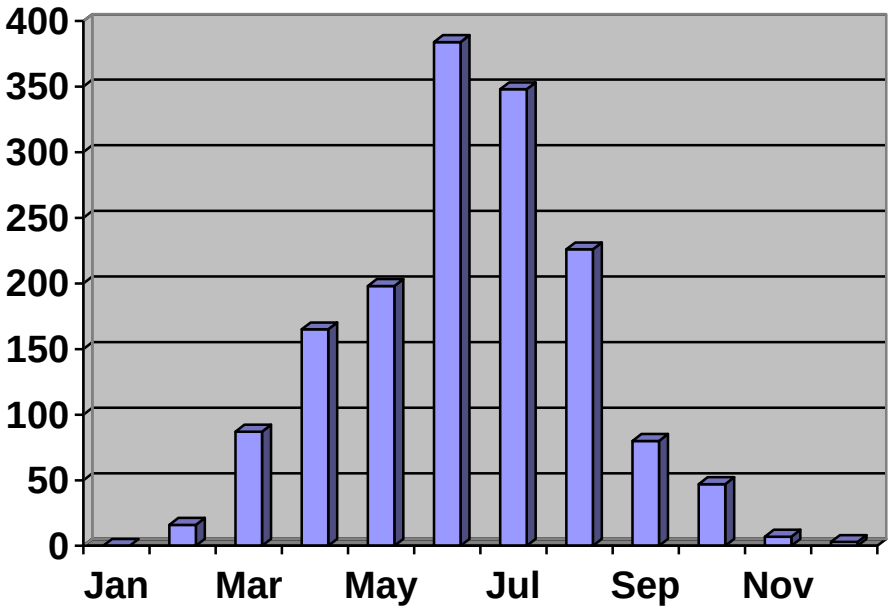
Number of Tornadoes by Hour

1950-2009 / WFO Quad Cities, IA/IL CWA



Number of Damaging Wind Reports by Month

1994-2006 / WFO Quad Cities, IA/IL CWA



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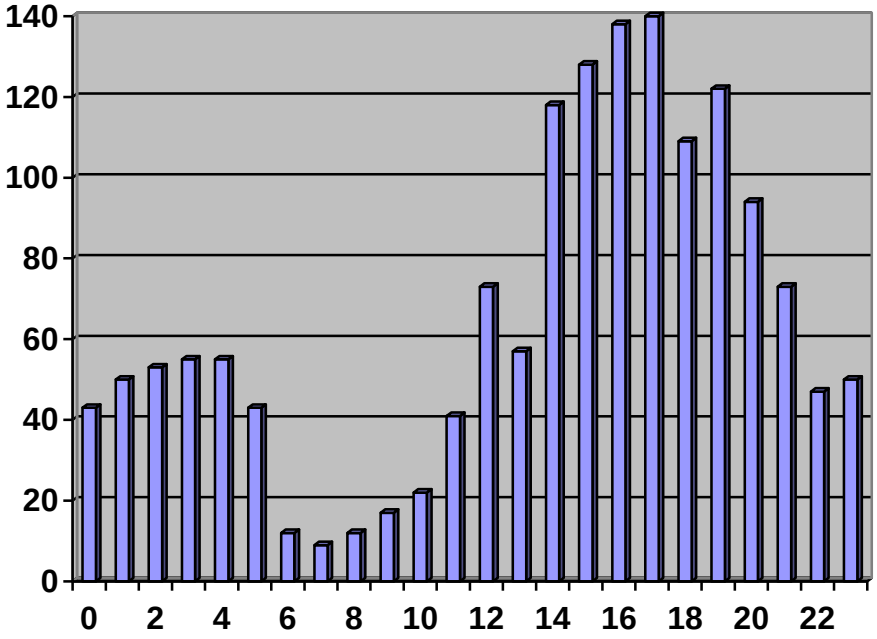
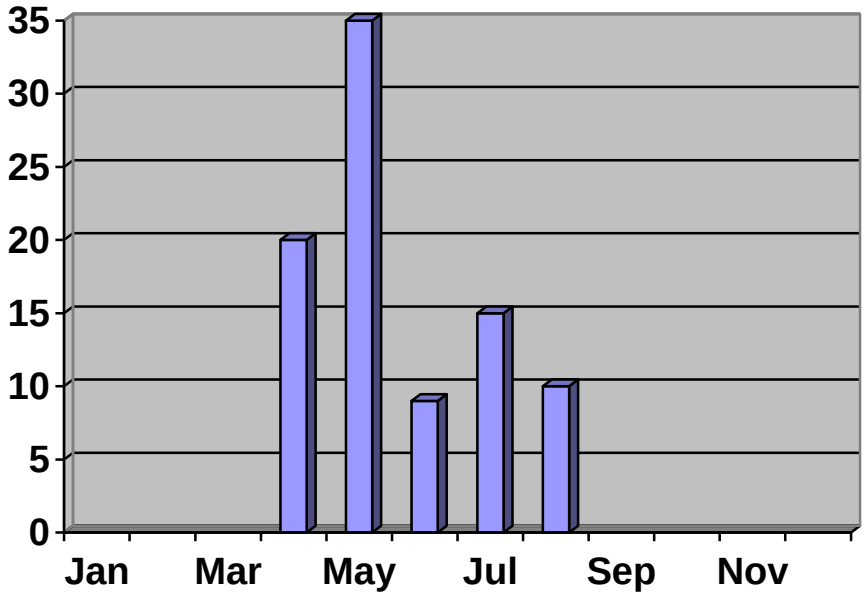


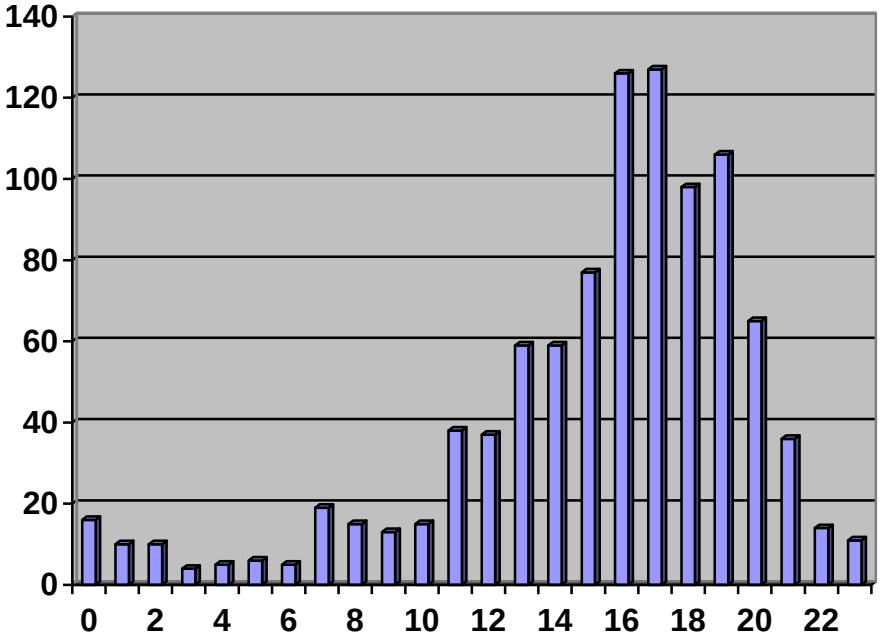
Number of Large Hail Reports by Month

1994-2006 / WFO Quad Cities, IA/IL CWA



Number of Large Hail Reports by Hour

1994-2009 / WFO Quad Cities, IA/IL CWA

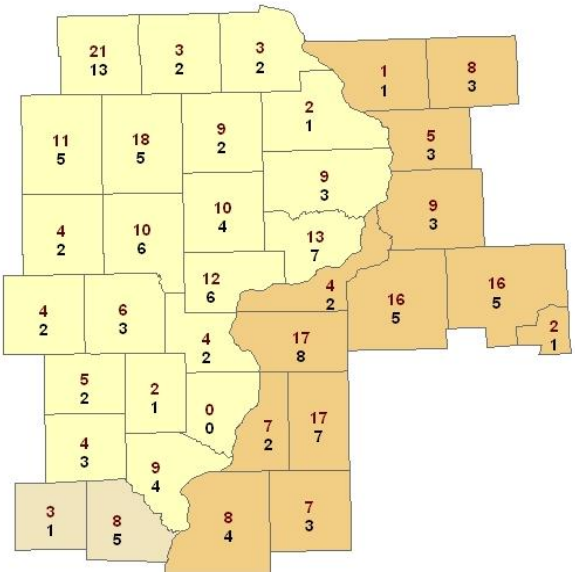


County-by-County Severe Weather Events

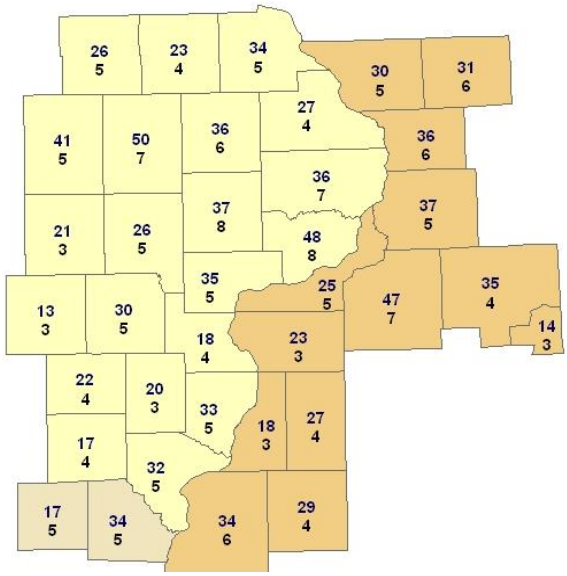
1995-2006

Top number: Total during the period **Bottom number:** Most in a single year

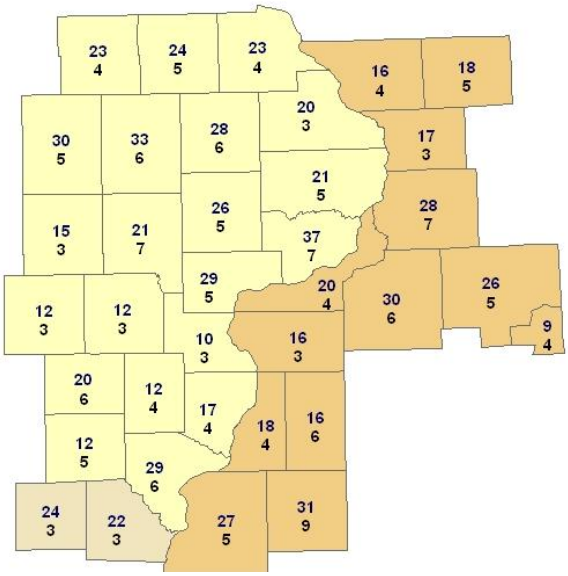
Tornadoes



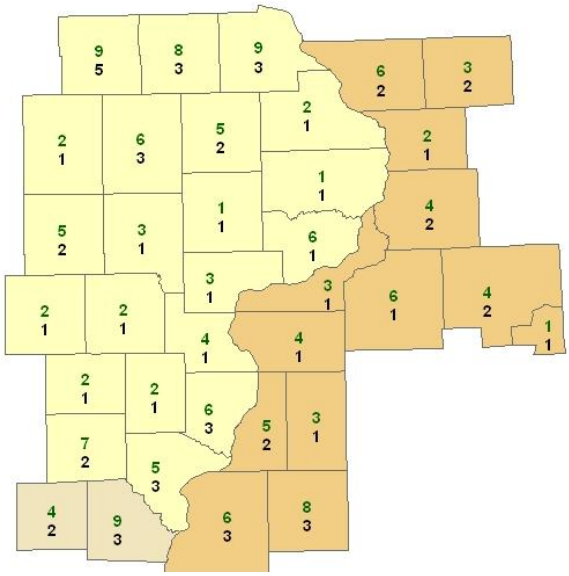
Severe Wind



Hail



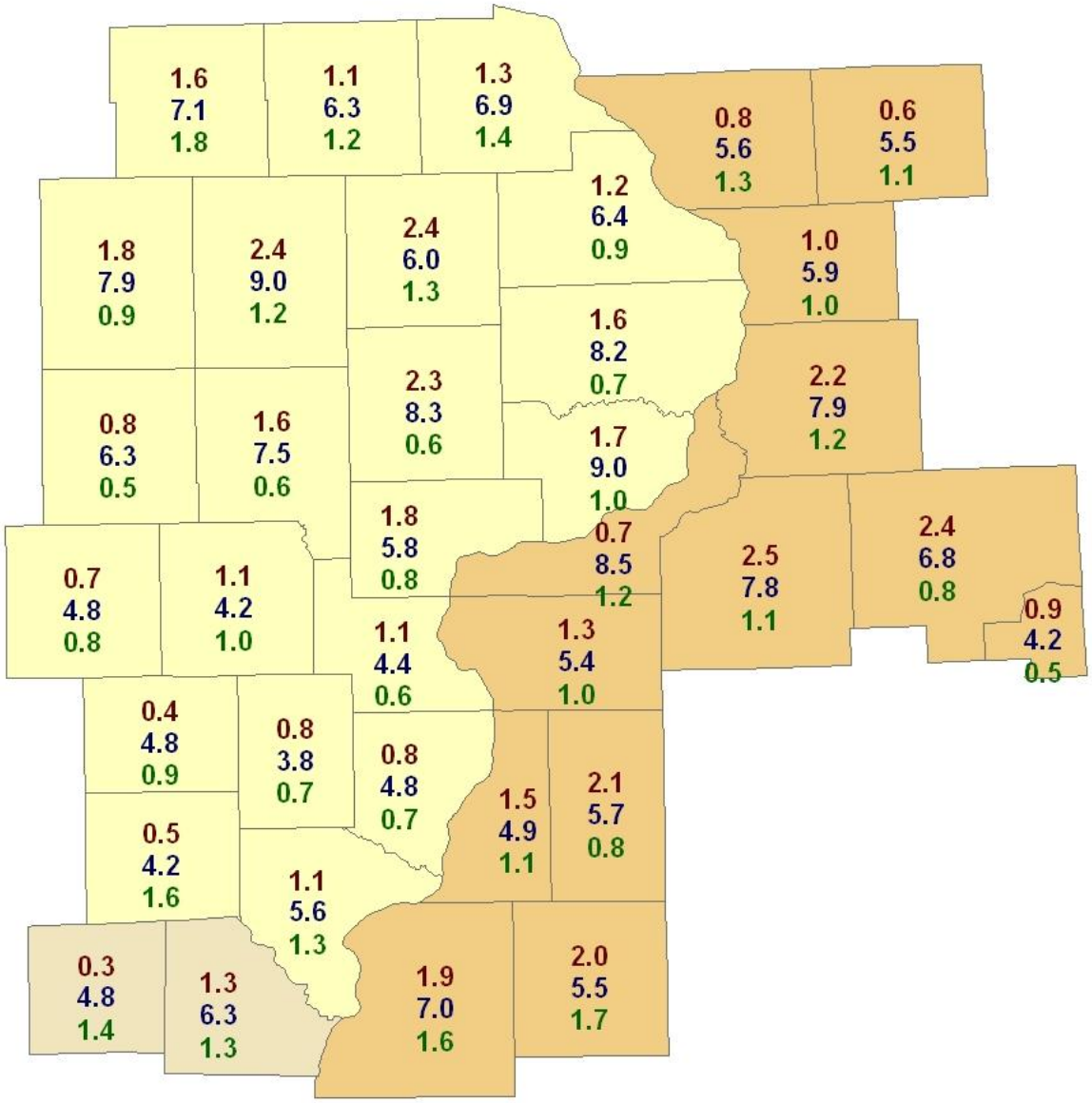
Flash Floods



County-by-County Severe Weather Warnings

Annual Average from 1995-2006
(Doppler Radar Era)

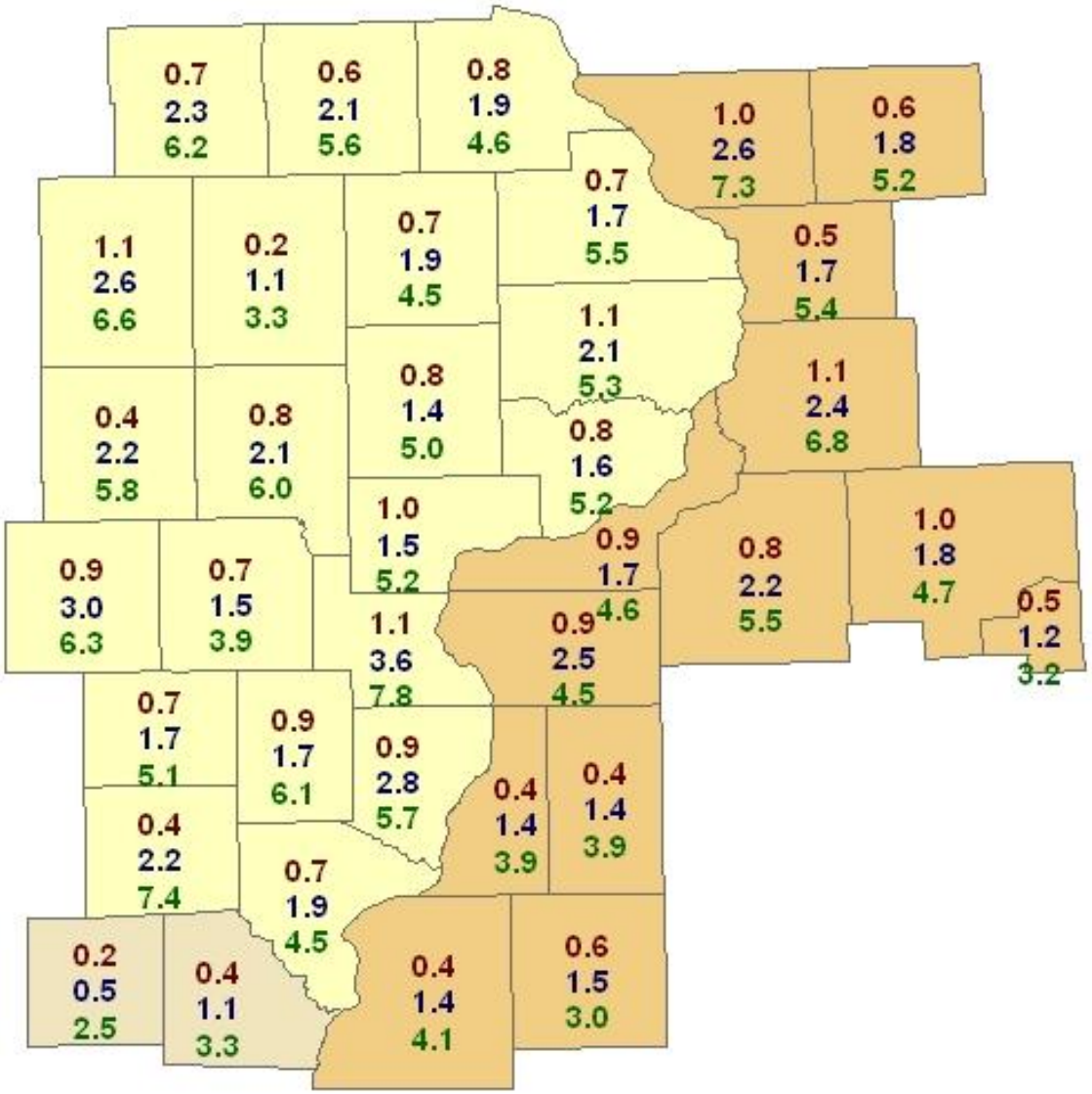
Red: Tornado warnings
Blue: Severe Thunderstorm Warnings
Green: Flash Flood Warnings



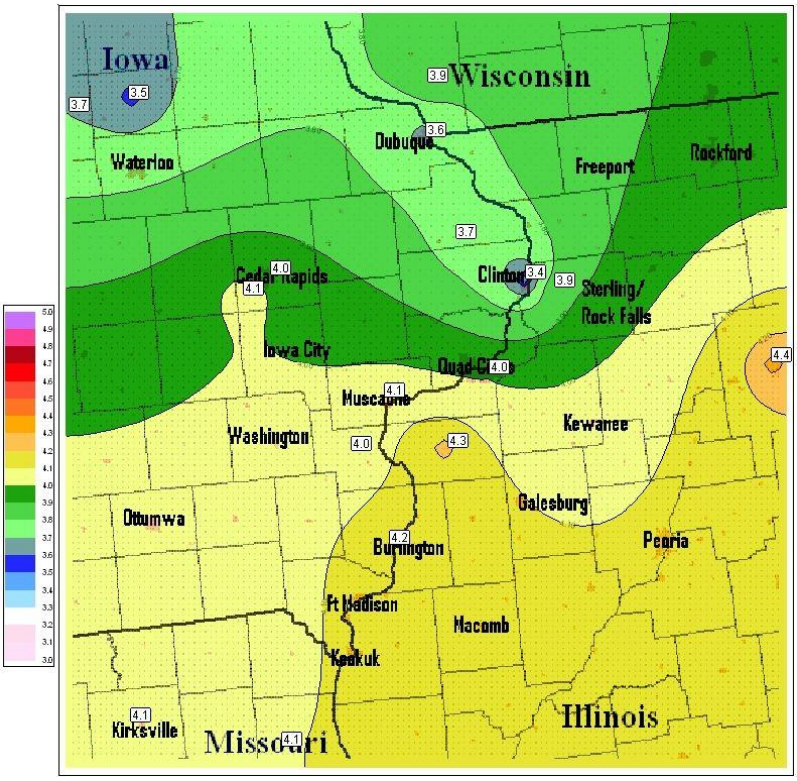
County-by-County 24-Hour Snowfall

Annual Average from 1995-2006

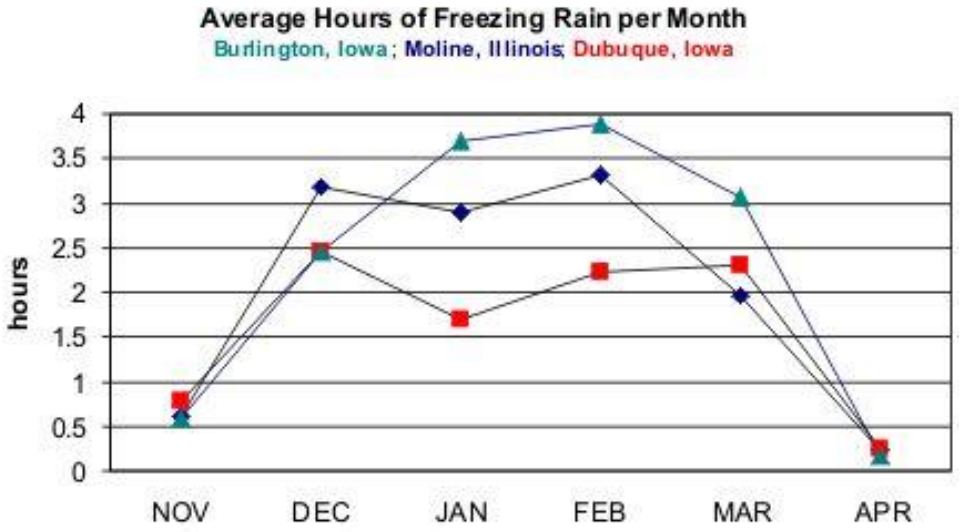
Red: 6 inches or more
Blue: 4 inches or more
Green: 2 inches or more



Ice Storms



The map above depicts the average number of days per year with freezing rain. Most locations average around 4 days per year, but this can vary from 0 days with freezing rain in some years to around 8-10 days on the higher side.

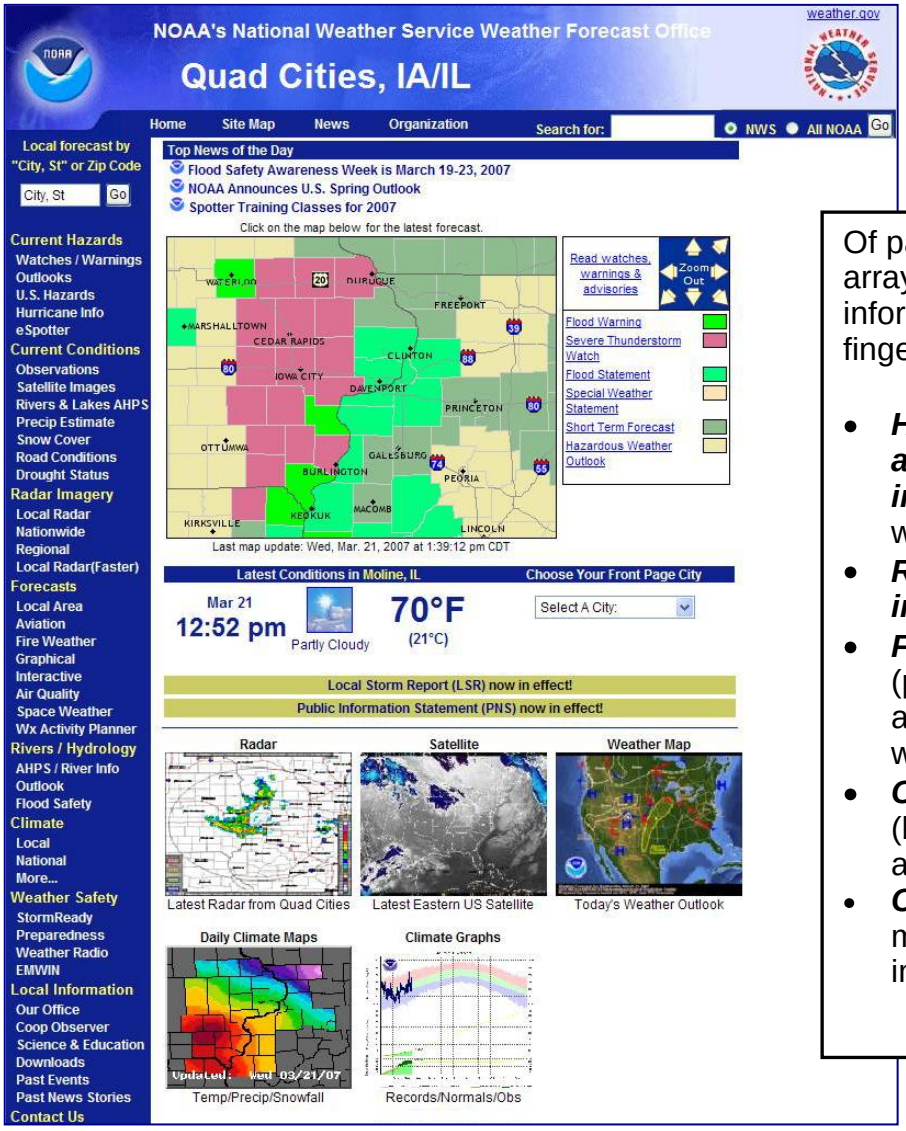


Freezing rain can occur anytime between November and April, with the average number of hours with freezing rain per month peaking in January and February (see graph above). Note that Burlington averages the most hours with freezing rain followed by Moline then Dubuque.

Information Outlets

Information Superhighway - www.weather.gov/quadcities

Whether you need tomorrow's forecast or last month's climate data, WFO Quad Cities Internet page features a wealth of information that is sure to fulfill many of your weather-related needs. To provide a quick assessment of current weather at a glance, links to local forecast and hazardous weather information, radar images, and weather headlines are front-and-center. Also accessible are details on NOAA All Hazards Radio, information and photographs from historic weather events, our online newsletter, and links to a variety of computer model weather data. To support your preparedness and safety needs, a plethora of downloads are also available on our website. These downloads include: brochures, reference materials, weather presentations, and other weather support resources.



Of particular interest is the array of current weather information-right at your fingertips! This includes:

- ***Hazardous weather and hydrologic information*** (outlooks, warnings, storm reports)
- ***Radar and satellite images***
- ***Forecast information*** (public, hydrologic, aviation, and fire weather)
- ***Current conditions*** (both general weather and hydrologic)
- ***Climate data*** (daily, monthly, and record information)

NOAA Weather Radio All Hazards

NOAA Weather Radio All Hazards is the smoke detector of severe weather. As the voice of the National Weather Service, it provides continuous broadcasts of the latest weather information. Digitally recorded weather messages are repeated every three to five minutes and are routinely revised at least every hour to cover changing weather conditions. NOAA All Hazards Radio serves the three state region and operates on a 24/7 basis, with the format tailored to the needs of the people within the listening area. During severe weather, the National Weather Service preempts the routine weather broadcast and substitutes special warning messages.

NOAA Weather Radio All Hazards broadcasts warnings and post-event information for all types of hazards - not just weather! As conditions warrant, broadcast information includes: natural (such as earthquakes, forest fires, and volcanic activity), human or technological (such as chemical releases, oil spills, nuclear power plant emergencies, AMBER alerts, etc.), and national emergencies. Working with other Federal agencies and the Federal Communications Commission's (FCC) Emergency Alert System (EAS), NOAA Weather Radio All Hazards truly is an all-hazards radio network, making it the single source for the most comprehensive weather and emergency information available to the public.

Commercial radio and TV stations are authorized to rebroadcast any material transmitted over NOAA radio, subject only to minimal restrictions stated in FCC Public Notice 70110852876.

Seven frequencies are reserved for NOAA All Hazards Radio. A specially designed radio or scanner is needed to receive the broadcast. The broadcast frequencies are:

162.400 MHz	162.450 MHz	162.500 MHz	162.550 MHz
162.425 MHz	162.475 MHz	162.525 MHz	

Currently, 17 NOAA All Hazards Radio transmitters serve the area covered by WFO Quad Cities. The broadcasts can be heard as far away as 40 miles from the antenna site, sometimes more. The effective range depends on many factors, particularly the transmitter height, terrain, receiver quality, and present weather. An outside antenna can significantly improve reception.

A complete listing of the stations serving the local area is included in Appendix E of this guide. Visit the web site (www.weather.gov/quadcities/) for more information on selecting a weather radio.

NOAA Weather Wire Service

The NOAA Weather Wire Service (NWWS) is considered the primary telecommunication network for disseminating weather information to the mass media, emergency management agencies, and other users. Using a combination of dedicated phone lines and satellite communications, information is placed on the NWWS in a matter of seconds from the time it leaves our office. An upgrade to the NWWS occurred in the year 2000 when the Replacement NWWS became operational. At its full

capacity, the new R-NWWS provides users with extensive graphics imagery in addition to text products.

Each text product issued by WFO Quad Cities is identified by a ten-character WMO (World Meteorological Organization) ID (format: TTAA00 KDVN), along with a six-character AWIPS ID (format: NNNDVN). For example, a Tornado Warning issued by WFO Quad Cities carries a WMO ID of WFUS53 KDVN and an AWIPS ID of TORDVN. This guide refers to products using the AWIPS ID. For programming purposes, the NWWS uses WMO ID's. A complete list of active text product identifiers can be found in Appendix C of this guide or on the web site at www.weather.gov/quadcities/tools/pils.htm

Weather wire customers can also define their geographic area of concern using a county identification system called the Universal Geographic Code (UGC). The UGC is based on the FIPS codes listed in Appendix D of this manual. In the future, the first digit of this code will allow counties to be divided into nine segments (NW/N/NE/W/C/ E/SW/S/SE), providing even finer resolution.

For more information on the NOAA Weather Wire Service, visit the NWS web site at www.nws.noaa.gov/nwws, or Dyncorp's web site at www.weatherwire.net. You can subscribe to the NWWS by calling Dyncorp at 1-800-633-2340.

Information Services

Community Safety and Preparedness Services

- **Risk Assessment –** A key part of being prepared is to know *what* you are preparing *for*. The NWS in the Quad Cities develops local climate studies of various weather phenomena to help community and business planners assess their hazardous weather risk. Parts of these studies are included in the climate section of this guide.

- **Severe Weather Awareness Week –** Each state designates a Severe Weather Awareness Week annually to focus education efforts about the hazards of severe weather. As a partner in this important effort, the NWS issues a TEST Tornado Warning at a designated time for each state. These practice warnings not only test the technical warning system, but also are an ideal opportunity for people to practice their own severe weather plans, whether at home, at work, or at school.

- **Winter Weather Awareness Week/Day –** Each Midwest state designates a Winter Weather Awareness Day or Week, usually in November, each year. This time serves as a reminder for people to make necessary preparations for the coming winter. The Quad Cities NWS Office provides preparedness and safety information through the web site (www.weather.gov/quadcities).

- **Lightning and Flood Safety Awareness Weeks –** The National Weather Service designates one week in the sp[ring to flood awareness and one week in the summer to lightning awareness.

- **Weather Safety Information –** For people to protect themselves, they must be informed about appropriate actions to take in different weather situations. The NWS, together with the American Red Cross, recommends protective actions for winter, heat, thunderstorms, tornadoes, and flash floods.
  - **Web site:** All safety information is available through the web site (www.weather.gov/quadcities/preparedness).
  - **Downloadable presentations:** The web site also includes downloadable safety presentations that you can use for your own safety education program.
  - **Brochures:** Official weather safety brochures may also be downloaded in PDF format from the web site. Limited numbers of these brochures may be available for specific needs by contacting your local Red Cross or NWS office.

- **Media Interviews and News Conferences –** Staff are available for interviews via the operations phone numbers 24/7/365. News conferences may be held for major weather stories (possible tornado outbreak, drought, major winter storm, etc.) To be added to the notification list for news conferences, contact Donna Dubberke at donna.dubberke@noaa.gov.

- **Severe Weather Spotter Training –** Storm spotters play an important role in any effective warning process. Organized through local emergency management agencies, National Weather Service personnel conduct up to 2 storm spotter training classes per county each spring from February through April.

Emergency Support Services

- **Air Quality –** In cooperation with state agencies, WFO Quad Cities disseminates air quality advisories (AQADVN).
- **Amber Alert –** WFO Quad Cities assists state law enforcement in the dissemination of Amber Alerts for child abductions.
- **Civil Emergency (HAZMAT, Nuclear, 911 Outages, etc.) –** WFO Quad Cities provides current observations and forecast information in support of local incidents. When an incident threatens life or property, a non-weather emergency message my also be disseminated via the weather wire and to EAS via NOAA All Hazards Radio.
- **Fire Weather –** Spot weather forecasts are issued by WFO Quad Cities for emergency management and land management agencies in support of wild fire containment and land management.

Text Information Services

General Forecast

- **Public Information Statement (PNS)** The Public Information Statement is issued as needed to share information regarding services or current events. For example, the PNS is used to convey results from storm damage surveys, report weather radio outages, describe service changes, or share preparedness and safety messages.
- **Zone Forecast (ZFP)** The zone forecast highlights the expected sky condition, weather, temperature, and probability of precipitation for each 12-hour period out to 7 days. Wind direction and speed are also included in the forecast out to 2½ days. WFO Quad Cities issues the zone forecast by 4 a.m. and 3:30 p.m. This forecast is updated as needed to meet changing weather conditions.
- **Point Forecast Matrix (PFM)** The Point Forecast Matrix provides detailed, numeric forecast data in a tabular format, with the weather parameters listed in 3-hour and 12-hour intervals out to 7 days into the future. These intervals, incorporated into a matrix format, create a detailed forecast, allowing quick viewing or decoding by automated systems of various weather parameters.
- **Special Weather Statement (SPS)** The Special Weather Statement is the primary method of communicating in plain language information about the expected conditions for the next several hours. Issued as needed, the SPS is an event-driven forecast designed to handle all weather, including “sub-severe” thunderstorms, fog, and winter conditions.
- **Terminal Aerodrome Forecast (TAF)** The Terminal Aerodrome Forecast is valid for 24 hours from the issuance time and provides a forecast of wind, visibility, weather, and sky condition (coverage and ceiling height) for a particular airport. WFO Quad Cities routinely disseminates TAFs four times daily for four airports: Moline, Cedar Rapids, Dubuque, and Burlington. Updates are issued as needed.

- **Area Forecast Discussion (AFD)** WFO Quad Cities issues the Area Forecast Discussion twice daily by 330 a.m. and 3 p.m. It provides scientific insight into the thought process of the forecasters on duty. The forecasters typically separate the discussion into short-term and long-term sections, aviation, and sometimes hydrology or fire weather. They use meteorological reasoning to compare numerical models, conceptual models, temperature and precipitation trends, etc.

- **Hazardous Weather Outlook (HWO)** The Hazardous Weather Outlook is an all-season outlook that gives a general assessment of the type, location, and timing of any hazardous weather potential across the county service area. It is subdivided into "Day One" and "Days Two through Seven". When appropriate, a "Spotter Information Statement" may be appended. WFO Quad Cities issues the Hazardous Weather Outlook around 5 a.m. daily, and updates as needed to convey new information regarding the hazardous weather potential.

- **Regional Weather Summary (RWS)** Issued by WFO Quad Cities by 9 a.m. and 9 p.m., the Regional Weather Summary provides an overview and highlights of weather conditions during the past 12 hours. This is followed by a synopsis of the upcoming weather and generalized 24-hour forecast for the region.

Severe Weather

- **Severe Thunderstorm and Tornado Watch**
  Watch County Notification (WCN) The WCN is issued by the local forecast office for the issuance and cancellation of local counties in severe thunderstorm or tornado watches.
  Watch Outline Update (WOU) The WOU is issued by the Storm Prediction Center for the initial issuance of a severe thunderstorm or tornado watch. The WOU is also updated hourly for each watch to incorporate any county additions or cancellations by the local forecast offices.

- **Tornado Warning (TOR)** A Tornado Warning is issued when a tornado is expected to develop (a storm with strong rotation for example) or one is sighted by a reliable source. The warning is as specific as possible, including the area affected, duration, and towns directly in the path of the storm. A call-to-action for public safety is also included.

- **Severe Thunderstorm Warning (SVR)** A Severe Thunderstorm Warning is issued when either or both of the following is occurring or imminent: ¾" diameter hail (penny size) or larger, winds of at least 50 knots (58 mph). The warning includes the area affected, duration, communities in the path, indication of the primary threat, and a call-to-action for public safety.

- **Severe Weather Statement (SVS)** A Severe Weather Statement is used to follow-up a Tornado or Severe Thunderstorm warning. The SVS updates the current position and expected movement of the storm and includes relevant reports of severe weather. An SVS can be issued to cancel a warning early and will usually be issued when the warning expires.

- **Local Storm Report (LSR)** A Local Storm Report distributes reports from an ongoing or recent storm. It is issued during an event as reports are received and may be issued at the event's conclusion to summarize the entire event.

Hydrology

- **Flash Flood or Flood Watch (FFA)** A Flood Watch is issued to alert the public that there is a threat of (flash) flooding, but the occurrence is neither certain nor imminent. The watch usually covers a large geographic area and is issued 12 to 48 hours before the primary threat of flooding is expected to occur.

- **Flood Warning (FLW)** A Flood Warning is issued (1*) for a county or area* when a gradual rise in waters resulting from heavy rains is expected to threaten life and/or property, or (2) *for point(s) along a main-stem river* that is expected to rise above flood stage. Detailed crest information for selected sites along the river is included.

- **Flood Statement (FLS)** A Flood Statement is used to follow-up a Flood Warning, whether for aerial or river flooding. A flood statement is also used to terminate a flood warning at the end of a flood event.

- **Flash Flood Warning (FFW)** A Flash Flood Warning is issued when *rapidly* rising water is expected to threaten life and/or property or when flash flooding has been reported.

- **Flash Flood Statement (FFS)** A Flash Flood Statement is used as a follow-up to a Flash Flood Warning. The statement contains the latest information on the event, including flooding reports that may have been received. It may also cancel or expire a warning.

- **Drought Statement (DGT)** A Drought Statement is typically issued for dry hydrologic conditions resulting in a level D2 (or more severe) drought as indicated by the US Drought Monitor.

- **Hydrologic Summary (RVA)** The Hydrologic Summary is a daily update of river conditions, including the stage, water temperature, and 24 hour change in river stage at numerous points along main stem rivers. The RVA may be issued more frequently during a river flood event.

- **Daily River and Lake Summary (RVD)** The Daily River and Lake Summary is the primary means of disseminating routine river stage forecasts. It is issued twice daily, once in the morning, and again in the evening. The RVD lists flood stage, current stage, 24 hour change, and five day river stage forecasts for selected locations.

Climate

- **Daily Climate Report (CLI)** The Daily Climate Report provides a tabular summary of the current or previous day's weather conditions. A preliminary version of the climate report is issued around 4:30 p.m. each day, summarizing the high, low, precipitation, etc. for the day so far. A final summary is issued for each calendar day early the following morning. Separate reports are issued for Burlington, Cedar Rapids, Davenport, Dubuque, Iowa City, and Moline.

- **Monthly Climate Summary (CLM)** The Monthly Climate Summary is similar to the Daily Climate Report. This report is issued at the first of each month and summarizes the climate parameters for the previous month. Separate reports are issued for Burlington, Cedar Rapids, Davenport, Dubuque, Iowa City, and Moline.

- **Seasonal Climate Summary (CLS)** The Seasonal Climate Summary is similar to the Monthly Climate Summary. This report is issued in the first few days of each new season, and it summarizes the climate parameters for the previous season. For climate purposes, the seasons are defined as: Winter (Dec-Jan-Feb), Spring (Mar-Apr-May), Summer (Jun-Jul-Aug), and Fall (Sep-Oct-Nov). Separate reports are issued for Burlington, Cedar Rapids, Davenport, Dubuque, Iowa City, and Moline.

- **Annual Climate Summary (CLA)** The Annual Climate Summary is similar to the Monthly Climate Summary. This report is issued at the first of each New Year, and it summarizes the climate parameters for the previous year. Separate reports are issued for Burlington, Cedar Rapids, Davenport, Dubuque, Iowa City, and Moline.

- **Record Event Report (RER)** A Record Event Report is issued whenever a record-breaking phenomenon occurs. The product may be used for nearly any record climatologic condition, but most commonly is used to report record high or low temperatures. Separate reports are issued for Burlington-Cedar Rapids, Dubuque, and Moline.

- **Regional Temperature and Precipitation Table (RTP)** The Regional Temperature and Precipitation Table is issued 3 times daily, twice in the morning and once in the evening. It lists the high and low temperatures and precipitation and snow depth for selected area towns.

- **Local Climate Observation (LCO)** The Local Climate Observation is used to report the CoCoRAHS (Community Collaborative Rain, Hail, and Snow Network) daily precipitation amounts.

Winter Weather

Unlike severe weather events, winter storms have the capability to completely immobilize large areas of a state and possibly several states simultaneously. Thus, winter weather watches, warnings, and advisories are issued for relatively *large* geographic areas rather than for one specific county. A Winter Weather Message (WSW) is used to issue, update, extend, expand, upgrade, or cancel a winter weather watch, warning, or advisory.

A WSW is issued for the following:

- **Winter Storm Watch**...Issued if there is a threat of heavy snow or sleet, significant accumulations of freezing rain or freezing drizzle, or any combination thereof. Usually issued for the second and third periods of a forecast (i.e., 12 to 36 hours in advance of the event). The definition of heavy snow in the Quad Cities forecast area is an average of 6 inches or more in 12 hours, or 8 inches or more in 24 hours.

- **Winter Storm Warning**...Issued for severe winter weather including heavy snow (6 inches in 12 hours or 8 inches in 24 hours), sleet (more than ½ inch accumulation), or a combination of winter precipitation and wind. Generally, a winter storm warning is issued within 12-18 hours of the storm's onset, but may be issued earlier with a high-confidence forecast.

- **Blizzard Warning**...Issued for winter storms with sustained winds or frequent gusts of 35 mph or greater combined with considerable falling and/or blowing snow frequently reducing visibilities to ¼ mile or less. These conditions should last for at least 3 hours.

- **Ice Storm Warning**...Issued for those winter storms expected to produce a damaging ice accumulation of ¼ inch or more.

- **Wind Chill Warning**...Issued for prolonged wind chill temperatures below -30°F.

- **Winter Weather Advisory**...Issued when wintry precipitation such as snow, sleet, freezing rain or drizzle, or a combination is expected, but conditions should not be life threatening if reasonable precautions are taken (e.g. 3 to 5 inches of new snow, blowing and drifting snow, sleet accumulations under ½ inch, minor freezing rain or drizzle). These criteria are subjective and may vary depending on the time of year and the public's perceived acclamation to winter weather conditions.

- **Freezing Rain Advisory**…Issued for freezing rain that causes ice accumulations less than ¼ inch.

- **Wind Chill Advisory**...Issued for prolonged wind chill temperatures -20°F to -29°F.

Non-Precipitation Hazards

Non-precipitation phenomena such as high wind, heat, frost, and fog can be just as hazardous as heavy rain or snow. Like winter-weather events, non-precipitation events often cover large geographic areas, and thus advisories and warnings are issued for a relatively *large* area. A Non-Precipitation Weather Message (NPW) is used to issue, update, extend, expand, or cancel a non-precipitation warning or advisory.

A NPW is issued for the following:

- **High Wind Warning**...Used when sustained winds of 40 mph or greater are expected to last for one hour or longer, or for *non-thunderstorm* wind gusts of 58 mph or greater for any duration. Includes gradient and mesoscale-high winds.

- **Wind Advisory**...Used when sustained winds of 30 mph or greater are expected to last for one hour or longer, or for sustained winds or gusts to at least 45 mph for any duration.

- **Excessive Heat Warning**...Issued when the heat index remains above 75°F during a 48-hour period and the afternoon heat index equals or exceeds 105°F. Also issued when Heat Advisory criteria persist for 4 or more days.

- **Heat Advisory**...Issued when daytime heat indices are at or above 100°F and/or the temperature is at or above 95°F.

- **Freeze Warning**...Used during the growing season when air temperatures *at or below* 32°F are forecast over a widespread area. A Freeze Warning is also issued if temperatures are forecast at or below 28°F for at least 3 hours, or 26°F for any duration. Adjectives such as *killing*, *hard*, or *severe* may be used as appropriate to describe the freeze.

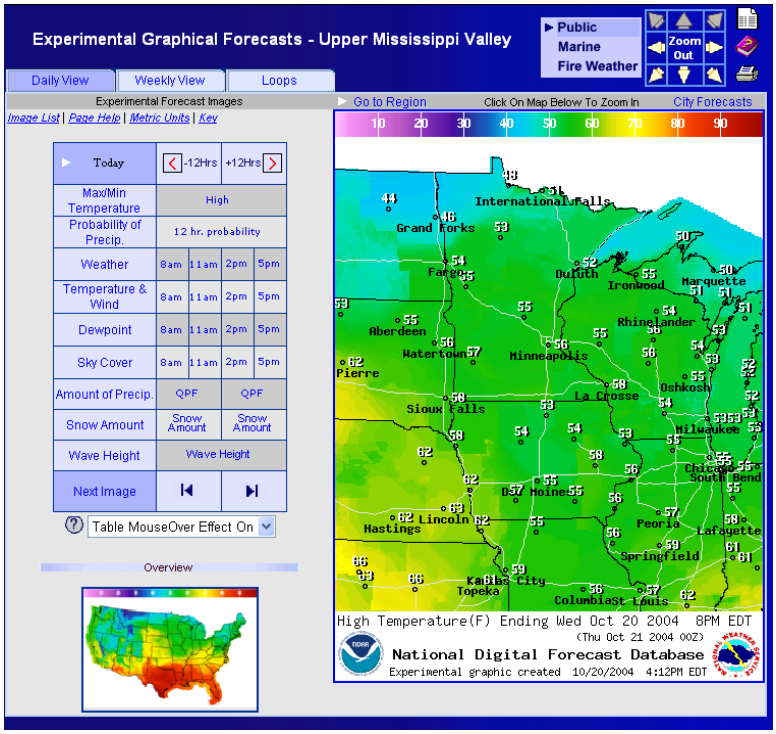
- **Frost Advisory**...Used during the growing season if a widespread frost is expected to pose a danger to farmers and gardeners (generally when overnight lows are forecast to fall below the mid 30s with clear skies and light winds).

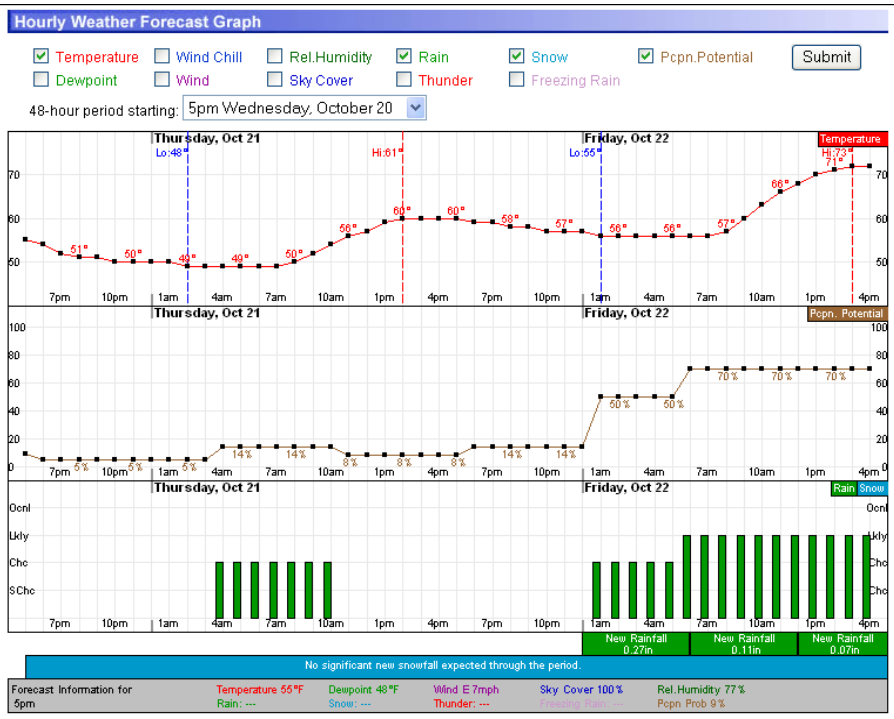
- **Dense Fog Advisory**...Issued when dense fog, reducing visibilities to ¼ mile or less, covers a widespread area.

Graphical Services

Available through our web site, graphical forecasts provide a different and very powerful view of the forecast than the traditional text.

This forecast image is an example of one graphical product available directly from our web page. Users are able to click through a full seven day forecast for a variety of weather elements, including: probability of precipitation, precipitation amount, weather, temperature, dew point, wind, and sky cover. These weather elements are available for the entire country.

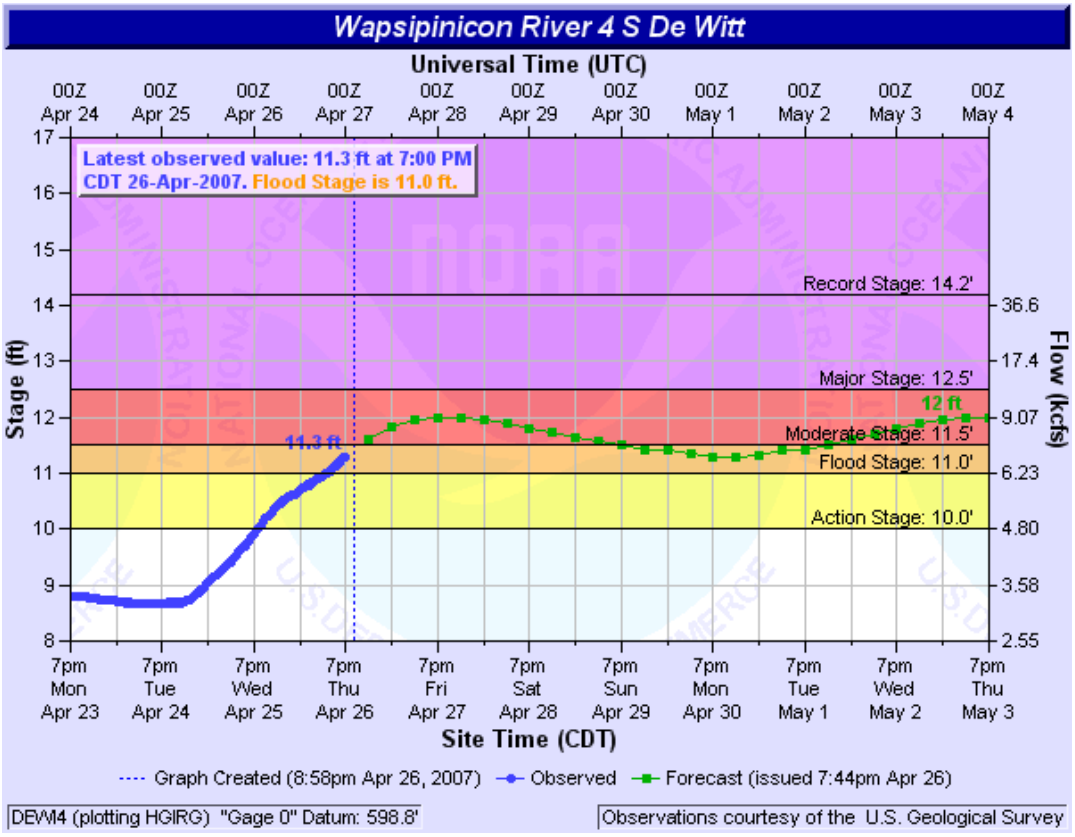




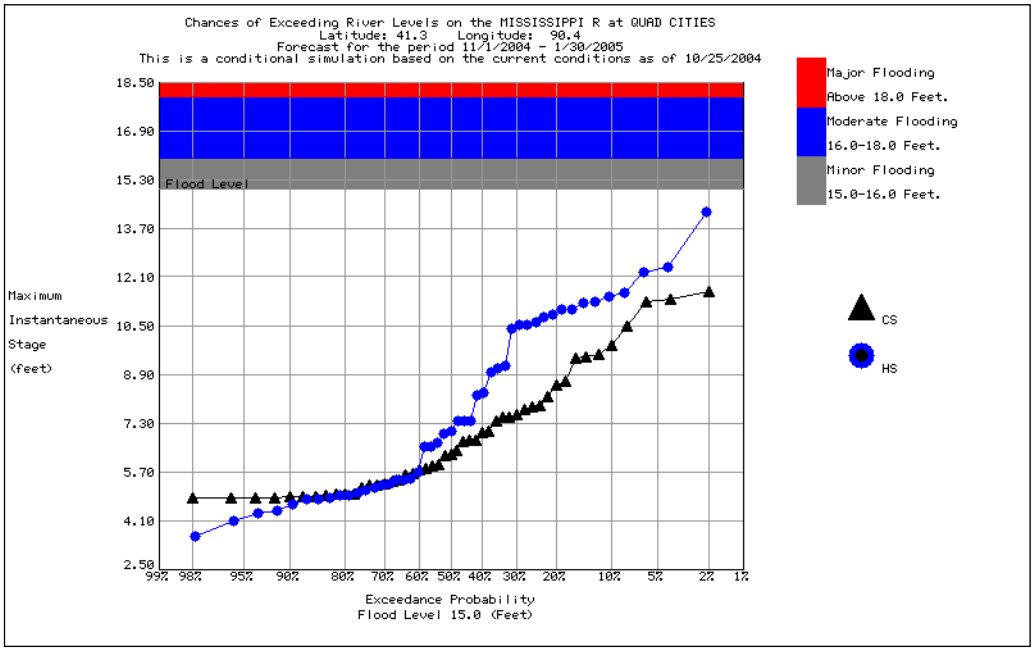
Interactive graphical forecasts are also available, allowing you to choose the weather elements and time period displayed.

These are just examples of the type of graphics available. Visit www.weather.gov/quadcities for the full suite of graphical and interactive forecast services.

River information is also available in graphical format. The Advanced Hydrologic Prediction Service provides traditional stage observations and forecast in the form of a *hydrograph* as well as a suite of probabilistic forecasts for numerous forecast points.



Visit www.weather.gov/quadcities/ahps for the complete suite of graphical river forecasts.

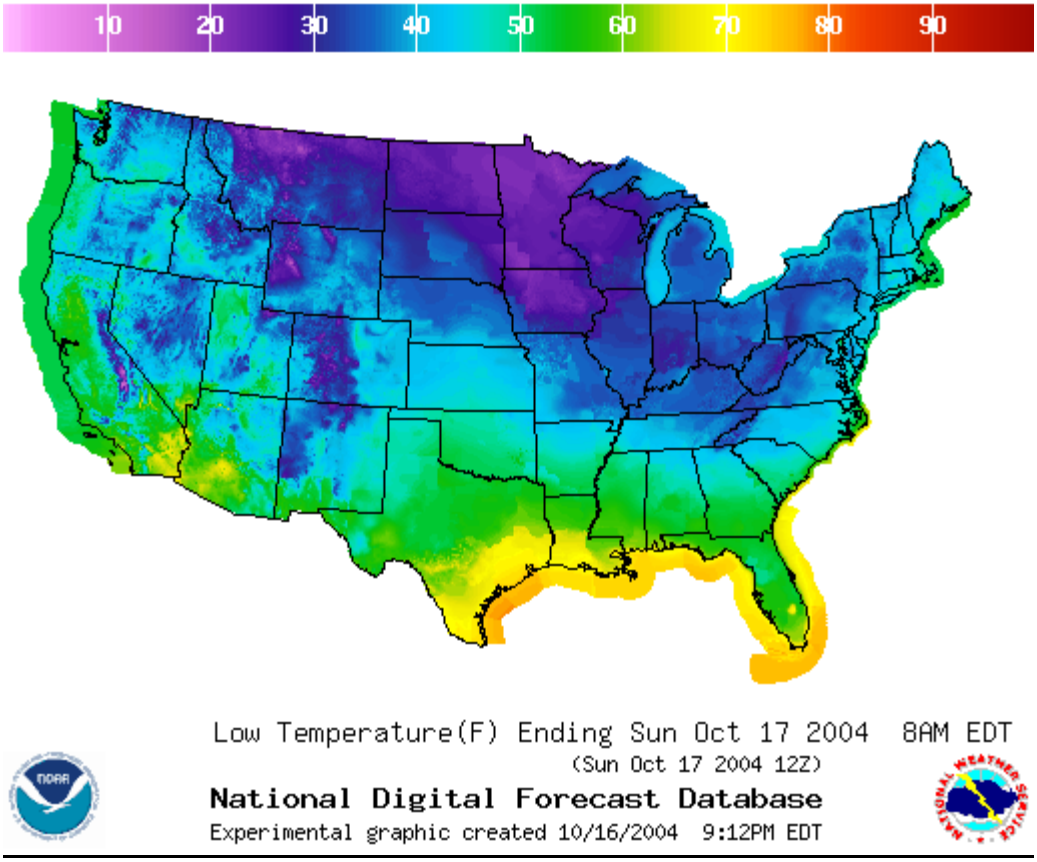


Example of a Probabilistic Forecast

Digital Services

In the evolving world of Information Technology, providing gridded, digital information is a vital enhancement of service. People in all walks of life have increasing ability to get and display graphical or digital information, which is easier to use and understand, in addition to being much more specific. There is a need for higher resolution forecast data, as quickly as it is available.

The National Digital Forecast Database, a nationwide infrastructure that composites local gridded forecasts and then disseminates them, enables the National Weather Service to meet the growing demands of its customers and partners into the 21st century.



How does NDFD work?

The field forecaster enters the forecast variables for their area of responsibility in digital form, and then generates text, numeric, and graphical forecasts from this local database. Then the digital, gridded forecasts from each local NWS office are put into the National Digital Forecast Database (NDFD). This NDFD is available via the internet to everyone - public and private - and allows users to create a wide range of text, graphic, and image products of their own.

What can be done with NDFD?
Private interests can produce a plethora of applications and products, either general information for radio and television broadcast, or tailored weather products for specific customers.
For example:
• Decision support systems that fit the forecast to the problem
• Weather information along a path
• Forecasts for vehicles and hand-held devices with Global Positioning Systems
• Text generation in more than one language
• Controls for smart appliances (e.g., heating, cooling, irrigation)
• Graphics for mass media
• Teaming the NDFD with geographic information systems (GIS) will provide very powerful capabilities

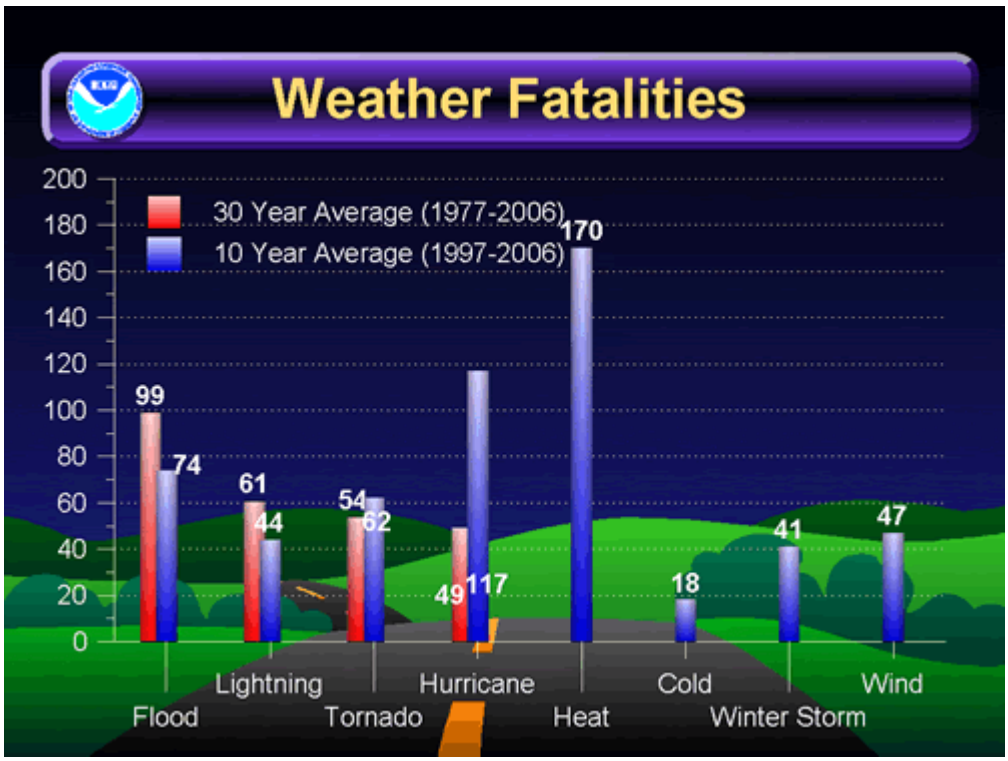
What forecast information is available through NDFD?
A variety of weather, water, and climate forecasts as well as digital watch, warning, and advisory information will become accessible through interactive web sites. Initially the following forecast elements are available (but the list is growing constantly):
• Daytime Maximum Temperature
• Nighttime Minimum Temperature
• Probability of Precipitation (12 hour)
• Sky Cover
• Hourly Temperature
• Dew point Temperature
• Wind Direction and Wind Speed
• Amount of snow/rain

With time, a wider array of forecast elements will be added to the database as will a larger set of graphical presentations.

Please visit www.nws.noaa.gov/ndfd for more information.

Safety Tips

While tornadoes and hurricanes grab the majority of media coverage, heat and flooding are more common weather related killers, as shown by the following graph:



Heat Wave

Heat claims over 200 American lives each year, usually because people needlessly expose themselves to the dangers of heat. Overexposure can cause disorders such as sunburn, heat cramps, heat exhaustion, and heat stroke. When the heat turns on…

- ***Slow down.*** Strenuous activities should be reduced, eliminated, or rescheduled to the coolest time of the day, usually early morning or late evening. Individuals at risk, including the elderly, the very young, or those on certain medications, should stay in the coolest available place, which is not always indoors.
- ***Dress for summer.*** Loose-fitting, lightweight, light-colored clothing reflects heat and sunlight, and helps your body maintain its normal temperature.
- ***Try not to eat as much.*** Foods (like proteins) that increase metabolic heat production also increase water loss.
- ***Stay hydrated.*** Drink plenty of water or other non-alcoholic fluids even if you are not thirsty (unless your physician has directed otherwise). You need water to keep cool.
- ***Do not drink alcoholic beverages.*** This is the same advice given for extremely cold weather. Alcoholic beverages will constrict the blood vessels, which will prevent adequate blood circulation to remove excess heat.
- ***Do not take salt tablets*** unless directed by a physician.

- ***Spend more time in air-conditioned places.*** Air conditioning in homes and other buildings markedly reduces danger from the heat. If you cannot afford an air conditioner, spending some time each day in an air-conditioned environment (such as a shopping center or movie theater) affords some protection.
- ***Do not get too much sun.*** Sunburn makes the job of heat dissipation even more difficult. Always wear adequate sunscreen if you must work outdoors.

Flash Flood

Flash flooding is a major weather-related killer in the United States, causing more deaths per year than thunderstorms or tornadoes. When a flash flood warning is issued for your area, or the moment you first realize that a flash flood is imminent, act quickly to save yourself. You may have only seconds.

- ***Get out of areas prone to flooding.*** This includes low-water crossings, ditches, etc.
- ***Avoid already flooded and high-velocity flow areas.*** Never attempt to cross a flowing stream on foot or by car.
- ***If driving, know the depth of water in a low spot before crossing.*** The roadbed may not be intact under the water. It takes less than a foot of water to float a car!
- ***If the vehicle stalls, abandon it immediately and seek higher ground.*** Rapidly rising water may engulf the vehicle and its occupants and sweep them away. Remember, most flash flood deaths occur in automobiles!
- ***Be especially cautious at night*** when it is harder to recognize flood dangers.
- ***Do not park your vehicle or camp along streams and creeks***, particularly during threatening conditions.

Thunderstorm

Thunderstorms pose a threat in a number of ways, from lightning to hail and damaging winds. Watch for clues to an approaching storm, including increasing wind, flashes of lightning, and rumbling thunder. When a thunderstorm threatens…

- ***If you can hear thunder, you are close enough to be struck by lightning.*** Move to a safe shelter immediately! Get inside a sturdy building or an all-metal vehicle.
- ***Do not stand near a natural lightning rod*** such as a tall, isolated tree, telephone pole, wire fences, clotheslines, or metal pipes and rails. Put down your golf clubs!
- ***Avoid projecting above the surrounding landscape*** by standing on a hilltop, tower, or other elevated object. Avoid boating and swimming for the same reason.
- ***In a forest, seek shelter in a low area under a thick growth of small trees.***
- ***In open areas, go to a low place such as a ravine***, but watch for rising flood water.
- ***Get away from open water, tractors and other metal farm equipment, or small metal vehicles such as motorcycles, bicycles, or golf carts.***
- ***If you are caught unawares, and you feel your skin tingle or your hair stand on end,*** lightning may be ready to strike you. Immediately crouch low to the ground with your hands on your knees. Do not lie flat on the ground. The idea here is to get as low as possible while minimizing contact with the ground.

Once indoors…

- ***Stay away from windows***
- ***Do not use corded phones or appliances*** unless in an emergency.
- ***If a thunderstorm with strong wind approaches, seek shelter in an interior room or basement away from windows.*** Some thunderstorms pack winds over 80 mph. Extreme winds such as these can break windows or peel the roof off a building.
- ***If you see rain blowing horizontally head for the basement or shelter area.*** The wind likely exceeds 70 mph.

Tornado

Tornadoes occur most often in the spring, during the late afternoon and early evening, but can occur any time of the day and year. When a tornado threatens, immediate action can save your life.

In short: Maximize walls between you and the outside of the building and minimize windows.

- ***Avoid doors, windows, and outside walls.*** Always protect your head! Remember that flying debris is responsible for most tornado deaths and injuries.
- ***In homes and small buildings***, seek shelter in a basement. If a basement is not available, go to an interior closet, bathroom, or hallway on the lowest floor possible. Get underneath something sturdy.
- ***In schools, nursing homes, hospitals, factories, and shopping centers***, go to pre-designated shelter areas. Interior hallways on the lowest floor are usually the safest.
- ***In high-rise buildings***, go to interior small rooms or hallways.
- ***In vehicles,*** go to a substantial shelter. If there is not shelter nearby, you must choose between these two last resort options:
  - Stay in the car with the seat belt on. Put your head down below the windows, covering with your hands and a blanket if possible.
  - If you can safely get noticeably lower than the level of the roadway, exit your car and lie in that area, covering your head with your hands.

  Your choice should be driven by your specific circumstances.
- ***Leave mobile homes,*** and go to a substantial shelter.

Winter Storm

Snow covered roadways and/or near-blizzard conditions can catch motorists off-guard. If you become trapped in your automobile:

- ***Avoid overexertion and exposure.*** Attempting to push your car, shovel heavy snow drifts, and other difficult chores during a winter storm may cause a heart attack even for someone in apparently good physical condition.
- ***Stay in your vehicle.*** Do not attempt to walk out in a snowstorm. Disorientation comes quickly in blowing and drifting snow. You are more likely to be found when sheltered in your car.
- ***Keep fresh air in your car.*** Freezing wet snow and wind-driven snow can completely seal the passenger compartment.

- ***Run the motor and heater sparingly***, and only with the downwind window open for ventilation to prevent carbon monoxide poisoning. Make sure the tailpipe is clear.
- ***Exercise*** by clapping hands and moving arms and legs vigorously from time to time, and do not stay in one position for long.
- ***Turn on the dome light at night.*** It can make your vehicle visible to work crews.
- ***Keep watch.*** Do not allow all occupants of the car to sleep at the same time.

Fog

Fog severely impacts aviation operations, bringing air traffic to a halt when visibilities fall below a certain threshold. Fog can also make the morning commute to work or school a slow go, so give yourself plenty of time to reach your destination.

- ***When driving, use low-beam headlights.*** High beams actually impair your vision, as the light is reflected into the driver's eyes.
- ***Slow down and allow extra room*** between you and the vehicle in front of you.
- ***Keep the radio volume low*** and listen for traffic you cannot see.
- ***Be patient!*** Do not pass lines of traffic even on a straight stretch of roadway.
- ***Do not stop on a freeway or heavily traveled road.*** If your car stalls or becomes disabled, move away from the vehicle to avoid personal injury.
- ***Consider postponing your trip.*** Visibility often improves by late morning.
- ***Pedestrians should stay clear of roadways***, since motorists cannot see them as easily (such as children at a bus stop).

Boating/Outdoor Activity

Plan for your outdoor activity several days in advance by monitoring the latest NWS 7-day forecast. While outdoors, stay alert…

- ***Keep an eye out*** for the following: the approach of dark, threatening clouds which may signal a squall or thunderstorms; a steadily increasing wind or sea; any developing decrease in visibility such as fog.
- ***Check weather radio broadcasts*** for the latest forecasts and warnings.
- ***Heavy static*** on your AM radio may be an indication of nearby thunderstorm activity.

If a thunderstorm catches you off guard:

- ***Gusty winds and lightning both pose a threat to safety.*** Water is an excellent conductor of electricity!
- ***Head for shore and stay below deck*** if possible.
- ***Avoid metal objects*** that are not grounded to the boat's protection system.
- ***Do not touch more than one grounded object simultaneously***, or you may become a shortcut for electrical surges passing through the protection system.
- ***Wear a life jacket*** and prepare for rough waters.

For more information on weather safety and preparedness, visit the preparedness section of our web site at www.weather.gov/quadcities/preparedness/.

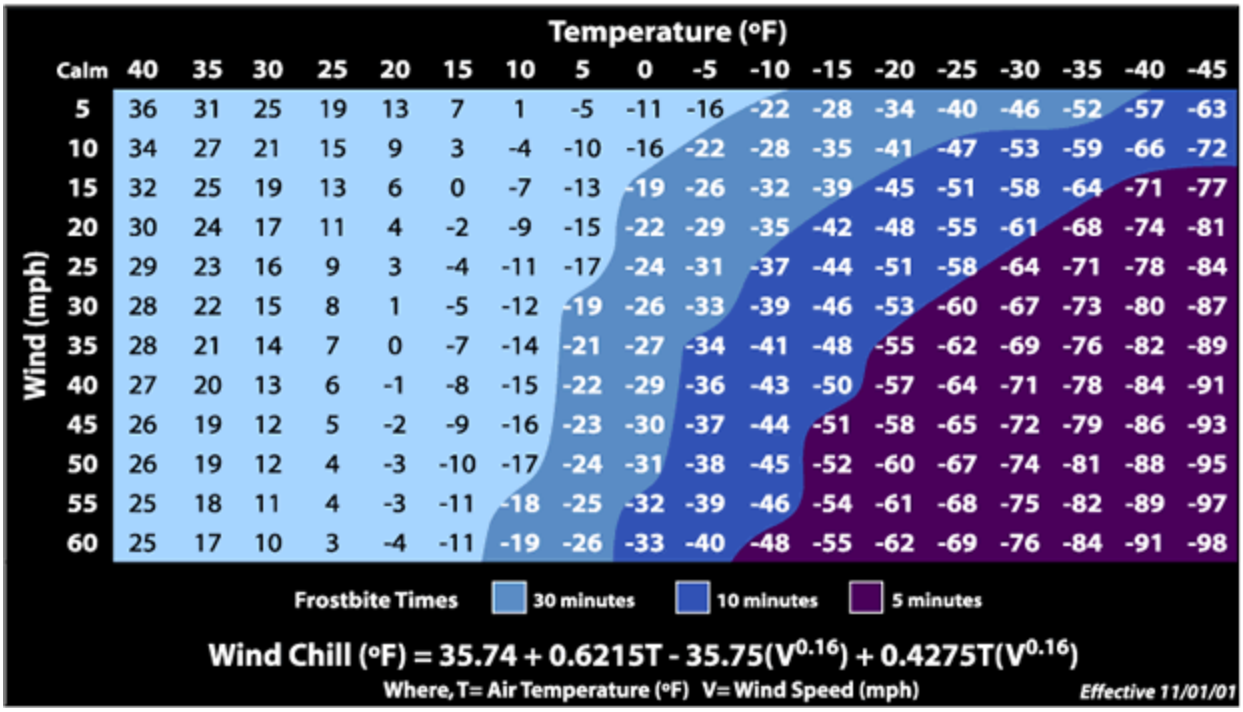
For downloadable versions of safety information, point your browser to www.nws.noaa.gov/om/brochures.shtml for comprehensive safety brochures.

Appendix A: Severe Weather Descriptors

Hail Diameter	Size Description	Hail Diameter	Size Description
.25”	Pea	1.5”	Ping-pong ball
.50”	Pea	1.75”	Golf ball
.70”	Dime	2”	Hen egg
.75	Penny	2.5”	Tennis ball
.88”	Nickel	2.75”	Baseball
1”	**Quarter (severe criteria)**	4”	Grapefruit
1.25”	Half Dollar	4.5”	Softball

F Scale	Wind Speed	Damage Description
EF0	65-85 mph (Light Damage)	Some damage to trees and TV antennas; Shallow rooted trees pushed over.
EF1	86-109 mph (Moderate)	Peels surface off roofs; windows broken; light mobile homes overturned; some trees uprooted or snapped; moving automobiles pushed off road.
EF2	110-137 mph (Significant)	Roofs torn off frame homes; weak buildings and mobile homes destroyed; large trees snapped or uprooted; railroad boxcars pushed over; cars blown off highway.
EF3	138-167 mph (Severe)	Roofs and some walls torn off frame homes; some rural buildings demolished; trains overturned; steel-framed hangars and warehouses torn; most trees uprooted or snapped.
EF4	168-200 mph (Devastating)	Well-constructed frame homes leveled, leaving piles of debris; steel structures badly damaged; trees debarked by fling debris; cars and trains thrown or rolled considerable distances; missiles generated.
EF5	>200 mph (Incredible)	Strong frame houses lifted off foundations and disintegrated; steel-reinforced concrete structures badly damaged; vehicle-sized missiles generated; incredible phenomena can occur.

Appendix B: Wind Chill Chart



Appendix C: Heat Index Chart

The **Heat Index** (HI) is the temperature the body feels when heat and humidity are combined. The chart below shows the HI that corresponds to the actual air temperature and relative humidity. NOTE: This chart is based upon shady, light wind conditions. **Exposure to direct sunlight can increase the HI by up to 15°F**

Heat Index	General Effect of Heat Index on People in Higher Risk Groups
80 to 89º - Caution	Fatigue possible with prolonged exposure and/or physical activity.
90 to 104º - Extreme Caution	Sunstroke, heat cramps and heat exhaustion possible with prolonged exposure and/or physical activity.
105 to 129º - Danger	Sunstroke, heat cramps or heat exhaustion likely, and heatstroke possible with prolonged exposure and/or physical activity.
130º or higher - Extreme Danger	Heat/sunstroke highly likely with continued exposure.

Relative Humidity (in percent)

Air Temp (in F)	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
120	107	111	116	123	130	139	148														
115	103	107	111	115	120	127	135	143	151												
110	99	102	105	108	112	117	123	130	137	143	150										
105	95	97	100	102	105	109	113	118	123	129	135	142	149								
100	91	93	95	97	99	101	104	107	110	115	120	126	132	138	144						
95	87	88	90	91	93	94	96	98	101	104	107	110	114	119	124	130	136				
90	83	84	85	86	87	88	90	91	93	95	96	98	100	102	106	109	113	117	122		
85	78	79	80	81	82	83	84	85	86	87	88	89	90	91	93	95	97	99	102	105	108
80	73	74	75	76	77	77	78	79	79	80	81	81	82	83	85	86	86	87	88	89	91

Dew Point (in F)

Air Temp (in F)	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85
104	110	110	110	110	110	110	111	112	113	114	115	116	117	118	119	121	122	124	125	127	128	130	132	133	136	137
102	108	108	108	108	108	108	109	110	110	111	112	113	114	116	117	118	119	121	122	124	126	127	129	131	133	136
100	106	106	106	106	106	106	106	107	108	109	110	111	112	113	114	115	117	118	119	121	123	124	126	128	129	132
98	103	103	103	103	103	103	104	105	105	106	107	108	109	110	111	113	114	115	117	118	120	121	123	125	127	129
96	101	101	101	101	101	101	101	102	103	104	105	106	107	108	109	110	111	112	114	115	117	118	120	122	124	127
94	98	98	98	98	98	98	99	100	100	101	102	103	104	105	106	107	108	109	111	112	114	115	117	119	122	124
92	96	96	96	96	96	96	97	97	98	99	99	100	101	102	103	104	105	106	108	109	110	112	114	116	119	121
90	94	94	94	94	94	94	94	95	95	96	97	98	98	99	100	101	102	103	105	106	107	109	110	113	116	117
88	88	88	88	89	89	90	90	90	91	92	93	94	95	96	97	98	99	100	101	103	104	106	108	110	112	114
86	86	86	87	87	87	88	88	89	89	90	91	91	92	93	94	95	96	97	98	100	101	102	104	106	108	110
84	84	84	85	85	85	86	86	87	87	88	88	89	90	90	91	92	93	94	95	96	97	98	100	101	103	-
82	82	83	83	83	83	84	84	85	85	86	86	87	87	88	88	89	89	90	91	92	93	94	95	-	-	-
80	80	81	81	81	82	82	82	82	83	83	83	83	84	84	85	85	85	86	86	87	87	-	-	-	-	-

Appendix D: Active Text Identifiers – 2008

Hazardous Weather and Hydrologic Information

Air Quality Advisory	AQADVN	AEUS73	KDVN
Drought Information Statement	DGTDVN	AXUS73	KDVN
Flash Flood / Flood Watch	FFADVN	WGUS63	KDVN
Flash Flood Statement	FFSDVN	WGUS73	KDVN
Flash Flood Warning	FFWDVN	WGUS53	KDVN
Flood Potential Outlook	ESFDVN	FGUS73	KDVN
Flood Statement	FLSDVN	WGUS83	KDVN
Flood Warning	FLWDVN	WGUS43	KDVN
Hazardous Weather Outlook	HWODVN	FLUS43	KDVN
Local Storm Report	LSRDVN	NWUS53	KDVN
Non-Precipitation Watch/Warning/Advisory	NPWDVN	WWUS73	KDVN
Severe Thunderstorm Warning	SVRDVN	WUUS53	KDVN
Severe Weather Statement	SVSDVN	WWUS53	KDVN
Short Term Forecast	NOWDVN	FPUS73	KDVN
Special Weather Statement	SPSDVN	WWUS83	KDVN
Tornado Warning	TRDVN	WFUS53	KDVN
Watch County Notification	WCNDVN	WWUS63	KDVN
Winter Storm Watch/Advisory/Warning	WSWDVN	WWUS43	KDVN

Climate Information

Climate Summary (Annual) - Burlington	CLABRL	CXUS53	KDVN
Climate Summary (Annual) - Cedar Rapids	CLACID	CXUS53	KDVN
Climate Summary (Annual) - Davenport	CLADVN	CXUS53	KDVN
Climate Summary (Annual) - Dubuque	CLADBQ	CXUS53	KDVN
Climate Summary (Annual) - Iowa City	CLAIOW	CXUS53	KDVN
Climate Summary (Annual) - Moline	CLAMLI	CXUS53	KDVN
Climate Summary (Daily) - Burlington	CLIBRL	CDUS43	KDVN
Climate Summary (Daily) - Cedar Rapids	CLICID	CDUS43	KDVN
Climate Summary (Daily) - Davenport	CLIDVN	CDUS43	KDVN
Climate Summary (Daily) - Dubuque	CLIDBQ	CDUS43	KDVN
Climate Summary (Daily) - Iowa City	CLIIOW	CDUS43	KDVN
Climate Summary (Daily) - Moline	CLIMLI	CDUS43	KDVN
Climate Summary (Monthly) - Burlington	CLMBRL	CXUS53	KDVN
Climate Summary (Monthly) - Cedar Rapids	CLMCID	CXUS53	KDVN
Climate Summary (Monthly) - Davenport	CLMDVN	CXUS53	KDVN
Climate Summary (Monthly) - Dubuque	CLMDBQ	CXUS53	KDVN
Climate Summary (Monthly) - Iowa City	CLMIOW	CXUS53	KDVN
Climate Summary (Monthly) - Moline	CLMMLI	CXUS53	KDVN
Climate Summary (Seasonal) - Burlington	CLSBRL	CXUS53	KDVN
Climate Summary (Seasonal) - Cedar Rapids	CLSCID	CXUS53	KDVN

Climate Summary (Seasonal) - Davenport	CLSDVN	CXUS53	KDVN
Climate Summary (Seasonal) - Dubuque	CLSDBQ	CXUS53	KDVN
Climate Summary (Seasonal) - Iowa City	CLSIOW	CXUS53	KDVN
Climate Summary (Seasonal) - Moline	CLSMLI	CXUS53	KDVN
Local Climate Message (CoCoRAHS Precipitation Summary)	LCODVN	SXUS53	KDVN
Record Event Report - Burlington and Cedar Rapids	RERDAV	SXUS73	KDVN
Record Event Report - Dubuque	RERDBQ	SXUS73	KDVN
Record Event Report - Moline	RERMLI	SXUS73	KDVN
Routine Temperature and Precipitation Table	RTPDVN	ASUS63	KDVN
Supplemental Climate Data - Davenport	SCDDVN	CXUS63	KDVN
Supplemental Climate Data - Dubuque	SCDDBQ	CXUS63	KDVN
Supplemental Climate Data - Moline	SCDMLI	CXUS63	KDVN

Routine Weather, Hydrologic, and Forecast Information

Area Forecast Discussion	AFDDVN	FXUS63	KDVN
Coded Cities Forecast	CCFDVN	FPUS43	KDVN
Point Forecast Matrix	PFMDVN	FOUS53	KDVN
Regional Weather Summary	RWSDVN	AWUS83	KDVN
River Forecast (Daily, Routine)	RVDDVN	FGUS53	KDVN
River Stages (Daily, Routine)	RVADVN	SRUS43	KDVN
River Statement	RVSDVN	FGUS83	KDVN
Zone Forecasts	ZFPDVN	FPUS53	KDVN

Aviation Information

Aircraft Accident Report	OAVDVN	NOUS53	KDVN
Terminal Forecast - Burlington	TAFBRL	FTUS43	KDVN
Terminal Forecast - Cedar Rapids	TAFCID	FTUS43	KDVN
Terminal Forecast - Dubuque	TAFDBQ	FTUS43	KDVN
Terminal Forecast - Moline	TAFMLI	FTUS43	KDVN

Non-Weather Emergency Messages

911 Telephone Outage Emergency	TOEDVN	WOUS43	KDVN
Administrative Message - External	ADRDVN	WOUS43	KDVN
Civil Danger Warning	CDWDVN	WOUS43	KDVN
Civil Emergency Message	CEMDVN	WOUS43	KDVN
Earthquake Report	EQRDVN	SEUS63	KDVN
Earthquake Warning	EQWDVN	WOUS43	KDVN
Evacuation Immediate	EVIDVN	WOUS43	KDVN
Fire Warning	FRWDVN	WOUS43	KDVN
Hazardous Materials Warning	HMWDVN	WOUS43	KDVN
Law Enforcement Warning	LEWDVN	WOUS43	KDVN
Local Area Emergency	LAEDVN	WOUS43	KDVN
Nuclear Power Plant Warning	NUWDVN	WOUS43	KDVN

Radiological Hazard Warning	RHWDVN	WOUS43	KDVN
Shelter In Place Warning	SPWDVN	WOUS43	KDVN
Volcano Warning	VOWDVN	WOUS43	KDVN

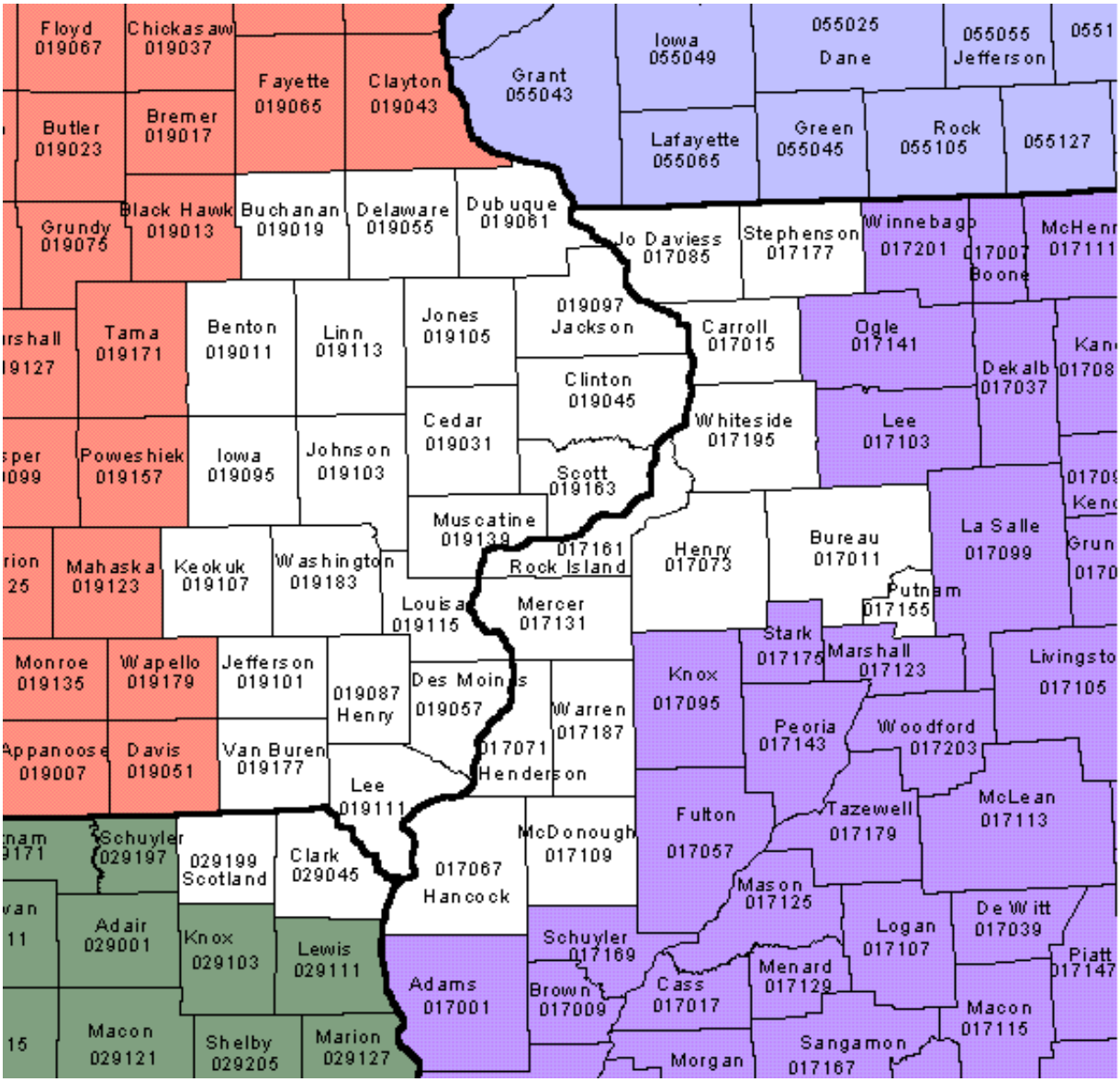
Miscellaneous Messages

Public Information Statement	PNSDVN	NOUS43	KDVN
Radar Free Text Message	FTMDVN	NOUS63	KDVN
Upper Air: DVN Freezing Level	FZLDVN	UXUS43	KDVN
Upper Air: DVN Mandatory Levels	MANDVN	USUS43	KDVN
Upper Air: DVN Significant Levels	SGLDVN	UMUS43	KDVN
Upper Air: DVN Upper Level Winds	ABVDVN	UFUS43	KDVN
Misc. Hydro Data	RR1DVN	SRUS53	KDVN
Misc. Hydro Data	RR2DVN	SRUS53	KDVN
Misc. Hydro Data	RR3DVN	SRUS53	KDVN
Misc. Hydro Data	RR4DVN	SRUS53	KDVN
Misc. Hydro Data	RR5DVN	SRUS53	KDVN
Misc. Hydro Data	RR6DVN	SRUS63	KDVN
Misc. Hydro Data	RR7DVN	SRUS73	KDVN
Misc. Hydro Data	RR9DVN	SRUS83	KDVN
Misc. Hydro Data	RRMDVN	SRUS43	KDVN
Misc. River Message	RVMDVN	SRUS43	KDVN

Information on format of WMO headers: www.nws.noaa.gov/oso/wmohdg.shtml

Nationwide list and other information on text product identifiers and dissemination, visit NWS Data Management at www.nws.noaa.gov/datamgmt/

Appendix E: Area County FIPS Codes



About FIPS Codes

FIPS codes establish a standard code identifier for each county in the United States. The full identifier for each county is a 6-digit number; the first digit for the county subdivision (this number should be set to 0; numbers 1 through 9 are NOT yet being used); the next two digits are the FIPS identifier for the state (Illinois is 17, Iowa is 19, Missouri is 29), and the last three digits are for individual counties. So for example, the full 6-digit FIPS code for Rock Island County, shown here, is 017161.

FIPS Codes for Other Counties

If you need FIPS codes for other counties, visit the NOAA Weather Radio web site (www.nws.noaa.gov/nwr/indexnw.htm) or call 1-888-NWR-SAME.

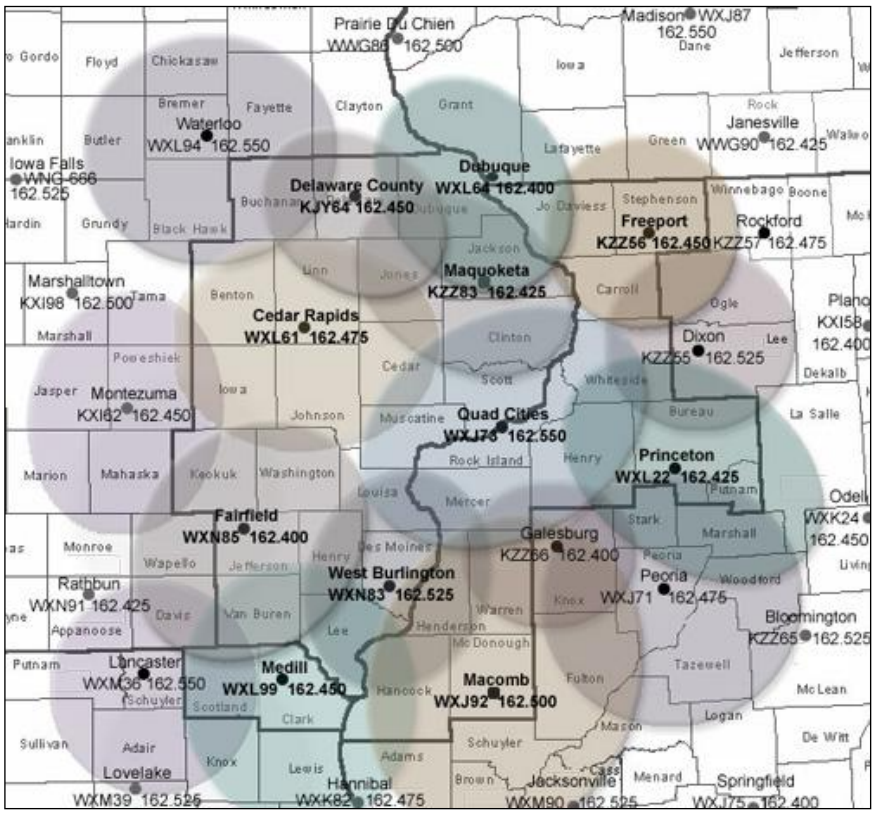
Appendix F: Local NOAA All-Hazards Radio Coverage

NOAA Weather Radio stations operate on one of 7 frequencies:

1. 162.400 MHz
2. 162.425 MHz
3. 162.450 MHz
4. 162.475 MHz
5. 162.500 MHz
6. 162.525 MHz
7. 162.550 MHz

See below for local area stations and exact county coverage. See reverse side for local FIPS codes.

Call 1-800-NWR-SAME for county FIPS codes used in programmable radios, or visit www.weather.gov for complete information.



Cedar Rapids - WXL61 **162.475**
Iowa: Benton, Cedar, Delaware, Iowa, Jones, Johnson, Keokuk, Linn, Tama, Washington.

Delaware County – KJY64 **162.450**
Iowa: Buchanan, Clayton, Delaware, Dubuque, Fayette, Jones, Linn.

Dixon – KZZ56 **162.525**
Illinois: Carroll, Lee, Ogle, Whiteside.

Dubuque - WXL64 **162.400**
Iowa: Clayton, Delaware, Dubuque, Jackson, Jones. Illinois: Carroll, Jo Daviess. Wisconsin: Grant, Lafayette.

Fairfield - WXN85 **162.400**
Iowa: Davis, Henry, Jefferson, Keokuk, Lee, Van Buren, Wapello, Washington.

Freeport - KZZ56 **162.450**
Illinois: Carroll, Jo Daviess, Ogle, Stephenson, Winnebago. Wisconsin: Green, Lafayette.

Galesburg – KZZ66 **162.400**
Illinois: Henry, Knox, Mercer, Warren.

Lancaster – WXM36 **162.550**
Iowa: Davis, Appanoose. Missouri: Adair, Knox, Putnam, Schuyler, Scotland, Sullivan.

Macomb - WXJ92 **162.500**
Illinois: Adams, Brown, Cass, Fulton, Hancock, Henderson, Knox, Mason, McDonough, Schuyler, Warren.

Maquoketa - KZZ83 **162.425**
Iowa: Jackson, Dubuque, Jones, Clinton, Cedar, Delaware. Illinois: Carroll, Jo Daviess.

Medill - WXL99 **162.450**
Missouri: Clark, Knox, Lewis, Scotland. Iowa: Lee, Van Buren. Illinois: Adams, Hancock.

Montezuma – KXI62 **162.450**
Iowa: Iowa, Jasper, Keokuk, Mahaska, Marion, Poweshiek, Tama.

Peoria – WXJ71 **162.475**
Illinois: Fulton, Knox, Marshall, Mason, Peoria, Putnam, Stark, Tazewell, Woodford.

Princeton - WXL22 **162.425**
Illinois: Bureau, Henry, LaSalle, Lee, Marshall, Putnam, Stark, Whiteside.

Quad Cities - WXJ73 **162.550**
Iowa: Clinton, Cedar, Louisa, Muscatine, Scott. Illinois: Henry, Mercer, Rock Island, Whiteside.

Waterloo – WXL94 **162.550**
Iowa: Black Hawk, Bremer, Buchanan, Butler, Chickasaw, Fayette, Floyd, Grundy.

West Burlington - WXN83 **162.525**
Iowa: Des Moines, Henry, Lee, Louisa. Illinois: Hancock, Henderson, Mercer, Warren.